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NO. 15

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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A NEW CANAL PROJECT.

A scheme to connect Lake Washington, a deep body of fresh water 21 miles long and 3 miles wide, with Puget Sound, near the city of Seattle, Wash., has been advanced by ex-Governor Eugene Semple, of Seattle. A project to connect the same bodies of water, heretofore formulated by the U. S. Engineers, has attracted considerable attention on account of being discussed in connection with the Puget Sound naval station, and also on account of being before Congress for appropriations. Of the two projected routes, the circuitous one, which follows natural depressions, is the government project. The plan of Mr. Semple involves cutting

through a hill, which at one point is 300 feet high, the material obtained to be used in filling up certain tide lands approximate to the cut. These tide lands belong to the state, and a bill was passed last winter allowing them to be mortgaged in the interest of the canal. One peculiarity of this bill is that it allows the actual cost of the work, with 15% profit, to be charged against the lands, thus practically eliminating the element of hazard from the undertaking. The only question, of course, would be whether the lands were valuable enough to stand the charge.

The canal would run through the tide lands, with a width of 800 feet for a distance of 6,150 feet, thence with a width of 300 feet for a distance of 5,750 feet. At this point there are to be locks with a lift of 32 feet from extreme low tide. Here the canal proper begins and runs to the lake, with a width on the bottom of 80 feet, a distance of 10,250 feet. The material in the tide land section, 7,241,037 cubic yards in amount, is glacial silt and can be readily handled by hydraulic dredges. The material in the hill section, 21,685,000 cubic yards in amount, is gravel, sand, boulders and joint clay, which can be handled, in part by sluicing, and in part by steam shovels and trains. To impound the material, 48,430 lin. feet of bulkheading will be required. The material will fill to above the level of high tide about 1,400 acres of land. The area available to be filled, and which is thought to be of sufficient value to stand the charge, is about 2,000 acres. The value of the lands that will be created is estimated at an average of \$15,000 an acre, and the cost of the fill at less than one-third of that. A water power station of 2,000 HP. and a drydock, operated by gravity, with a capacity to dock a vessel drawing 28 feet, will be constructed at the outlet of the canal proper. The city of Seattle, in whose harbor these improvements are contemplated, is the commercial metropolis of the state of Washington and has a present population of 67,000.

STRONGER SHAFTS NEEDED.

The weak point in the modern North Atlantic steamer as developed by the competition in the "greyhound" line, appears to be the propeller shaft; and this is the particular object to which engineering inventive skill should address itself. That a shaft can be made which would be capable of withstanding any strain, will not be doubted by scientific minds; and if it be possible in the scientific sense it should be attainable practically. Success would not only insure great profit to the inventor of such a shaft, but by its use the ocean steamers would be relieved from an ever-present source of danger.

THE CANADIAN SAULT CANAL.

The original contract for the Sault Ste. Marie Canal provided for locks 600 feet in length by 85 feet in width, with 16 feet 3 inches of water on the mitre sill, the time allowed for the completion of the work being from November 20, 1888, to May 10, 1892. In the early part of 1891, upon representations being made on the importance of increasing the depth of water in the canal and the dimensions of the locks to 650 feet by 100 feet, negotiations were had with the contractors, resulting in an agreement dated June 13, 1891, by which the time for completion of the work was extended to May 10, 1893. In the early part of 1892 it was decided to further increase the size of the lock to 900 feet by 60 feet and the depth of water to 20 feet 3 inches, and the contractors undertook to make the change and complete the work by December 31, 1894. But in 1892 it was considered important to have the canal completed in the summer of

1894, and an agreement was entered into on November 8, 1892, whereby the contractors undertook to complete the masonry by December 31, 1893. The first stone in the construction of the lock was laid September 15, 1892. In consideration of additional work involved in changes made in the dimensions of the lock, the time for the completion of contract has been extended to June 30, 1894.

A SUBMARINE SENTRY.

C. A. Stevenson, a Philadelphia expert, has been making experiments for locating the positions of vessels at harbor entrances, when during certain stages of the weather, other observations cannot be made. He proposes that a cable might be laid down in the sea, and, by changing the electric state of the cable, vessels passing near or over it might be able, by means of a detector on board, to discover that they were in its vicinity. Some experiments showed the method to be feasible, since the sea offers no insurmountable difficulty, and he has constructed two instruments which will act through 180 feet of water.

The first instrument is a coil of uninsulated copper wire rope dipping into the water at the bow of the boat, and a similar water connection at the stern. If these are joined by a wire with a telephone on the circuit it will be found that, even without an induction of coil or other arrangement to magnify the effect, a very sensitive instrument is produced, and that, when the wires from bow to stern of the boat are at right angles, or nearly so, to a cable laid in the water at some distance from it, the sounds produced by a magneto-electric machine connected to one hole of the machine are audible in the telephone. If the water connections are equidistant from the cable, as they would be if the boat were immediately over the top of it, or lying broadside side on, no sound is heard. The action takes place when the coils in the water are insulated. The cable also may be insulated or uninsulated. The action is similar with an induction coil, and will also act if the potential of the cable is charged and is then kept so.

With the coils separated ten feet at the bow and stern of a small boat put down from the vessel, and an insulated wire 400 feet in length, laid through a small lake of brackish water 15 feet deep, the alterations produced by the bobbins of a magneto-electric machine were perfectly distinct at the end of the lake 340 feet away from the wire, and the limit of audibility could not be ascertained. Further trials will be necessary to determine the law of the falling off of the intensity of sound with the increase of the distance from the cable for a given fixed distance between the water connections, as well as to determine the law of increase of intensity for any increase of distance between the bow and stern connections for a given fixed distance from the cable.

Mr. Stevenson's second instrument is a coil of insulated wire surrounding a core (that is, an electro-magnet with a telephone in the circuit of this coil). With this instrument the making and breaking of the current produced through a wire 200 feet in length could be detected through 60 feet of salt water. When sunk in water the sound seems just as loud. He is of opinion that the action of the instrument consists in the break, if broken sufficiently rapidly, inducing a current of the coil, which the core intensifies immediately. The sound of a Bell telephone with the instrument was almost deafening with 15 feet of water. This electro-magnet system of induction, in contradistinction to the parallel wire system, has no earth connection, being entirely insulated, and must therefore be a case of true induction through water.

NEWS AROUND THE LAKES.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

Capt. Twitchell arrived from Manitowoc Monday to take charge of the L. M. & L. S. Co's steamer City of Traverse.

Capt. John Prindiville chartered the steamer Canisteo and consorts Stewart and Pomeroy for corn to Kingston at 3 cents free of canal tolls.

A large fleet of lumber carrying schooners left here Sunday for Manistee, Menominee and other ports on their first trip this season.

J. G. Keith & Co. chartered the steamer John Duncan for corn to Port Huron at 1½ cents, the schooner Lake Forest for corn to Point Edward at 1¼ cents.

The steamer Uganda will discharge her cargo of corn this week at Armour A and B elevators. Armour & Co. were the shippers. They will unload the cargo free of all expense to the steamer.

The British American Starch Co., of Brantford, Ont., have purchased the cargo of corn of the steamer W. H. Barnum, recently sunk in the Straits of Machinaw, for \$500 from the underwriters. The Barnum is reported lying in good shape in about eleven fathoms of water.

The schooner John Loomis McLaren arrived Monday night with lumber from Menominee. Capt. K. Johnson, reports that his schooner met with a bad mishap on her way to Menominee, she having collided with a bridge at Sturgeon Bay canal when sailing through, knocking off the bridge tender's shanty and considerably damaging the bridge, thus making her first trip a very poor one financially.

The Lake Michigan and Lake Superior Transportation Co. have commenced receiving freight for Lake Superior ports. The company's steamer Jay Gould will be the first boat to start out this season. She will leave here, ice and weather permitting, between the 15th and 20th of April.

The Northern Michigan Transportation Co.'s steamer City of Charlevoix, Capt. William Finucan, left here Thursday morning for Northern Michigan ports on her first trip this season. The company's steamer Petoskey, Capt. Robertson, arrived from Manistee Friday evening on her first trip this season, and left here Saturday evening for northern Michigan ports. Both steamers carried large cargoes of merchandise.

Inspectors Sinclair & Moore are very busy inspecting the hulls and boilers of the large fleet of steamers at this port. It was reported here Tuesday that Capt. McIntosh, of the Graham & Morton Transportation Co.'s steamer City of Chicago, had received the appointment as United States inspector of hulls in Detroit district. Capt. McIntosh is much respected and liked here by the traveling public and his departure from this city will occasion much regret.

Telegrams to the Lake Superior Line indicate that ice is steadily forming on Lake Superior, and navigation is not likely to open there before May 1. Many ports which were free of ice early in March are now iced up again.

Not a pound of grain was offered for lake shipment here Tuesday. The trouble is not over the question of freights, but arises simply from the fact, shippers say, that there is no sale for grain under present conditions. One line agent has been endeavoring for five days to get 15,000 bushels to fill out a cargo, but has been unable to secure it. Vessel agents are not hopeful of any improvement in the trade for some time. Seven cargoes or 600,000 bushels of corn are being returned to the elevators. In all cases settlements have been made with the vessel owners on the basis of what the boats would have earned had they carried the grain to Buffalo for which they were originally chartered. It was said, however, that this particular move in discharging vessels was not due so much in the fear of a corner at their loading port as to the fact that corn was now unsalable in the East at present prices, and if these cargoes went forward they must ultimately be sold at a heavy loss. The shippers preferred to pay the loss here rather than be at the mercy of buyers in the East.

The loss of the Barnum and Minneapolis has prevented any cutting of insurance rates, and it is believed that the tariff adopted two weeks ago is being strictly upheld. All general agencies report that the applications for hull season policies are fewer than in many years, indicating a general movement to keep boats out of commission till business improves.

The schooner Lottie Cooper, Capt. Fred Lorenz, with hardwood lumber from Pine Lake, was wrecked off Sheboygan, Wis., early Monday morning. She came to anchor off that port Sunday night, the sea being too rough for her to enter the harbor. About midnight one of her crew was washed overboard and drowned; the captain and the remainder of the crew were rescued by the life-saving crew. The schooner is reported a total loss. She was built at Manitowoc in 1876. Her dimensions

were 252 gross tons. She was owned by Capt. Ole Groh, Sheboygan, and valued at \$4,500. Her cargo of elm lumber was valued at \$3,000. There was no insurance on the schooner or her cargo. WILLIAMS.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

The suit of the owners of the burned steamer Northerner to recover the insurance on the boat is being tried here this week. The owners sue on the marine insurance policies first and if beaten will fall back on the fire policies. The Northerner went ashore on Keweenaw Point, Lake Superior, in December 1892. She was released and taken to L'Anse, and, while in charge of Capt. Rounds for the underwriters, was burned there. The amount involved is \$45,000. The risks were placed by Capt. Eber Ward of Detroit, and it appears that the extension to the policies was not given, but some agreement entered into with the underwriters, who will set up for defense that the steamer was only covered from day to day and that the risk had been allowed to run out.

The Samuel Marshall was the first vessel to arrive this season with lumber consigned to Buffalo parties. She wintered, with her cargo, at Detroit. The lumber was shipped at Marinette last season.

Buffalo is full of out-of-town marine men. Parker and Millen are down from Detroit to lay up their fleet, 14 of which will be here including the schooners Redwing and San Diego, consorts of the foundered steamer Minneapolis. M. W. Humphrey of the Eddy and Shaw Line is here to cancel the coal charter that the tow took last week. It is found that they cannot now get to Chicago before the 16th, when their insurance runs out. They will go to Detroit to tie up. Manager John Shaw of the Selwyn Eddy has come to see what it is best to do with his fleet.

But by far the largest body of marine men are here to attend the trial of the suit of the owners of the burned steamer Northerner against the insurance companies, which refuse to pay up their policies. The managing owner of the boat is E. S. Blakeslee, formerly of Rochester, but now of New York. He together with Mr. Brown of Toronto, who had an interest in her, is here, though the real contest will come from the Kelderhouse interest, which holds a large amount of the \$45,000 involved. Others who have come to attend the suit are Capt. Eber Ward of Detroit, who placed the insurance, being at the time the agent of the boat; Herman Ralph and James E. Dickinson, Detroit vessel owners; J. J. Clark of the Detroit Fire & Marine Co., Warner White of the Michigan Fire & Marine, C. A. McDonald, J. S. Gadsden and A. Fitch, Chicago insurance agents; H. D. Goulder of Cleveland, F. Canfield and William V. Moore of Chicago, marine lawyers. It is arranged to try the suit against the Detroit Fire & Marine Co. first, though it is not agreed to let the other cases depend on it, for there are different circumstances attending each case.

The Lehigh liners Tuscarora and Seneca have cleared for Chicago. It is stated that they are merely to go up light, as the line has no package freight carriers there. They will not come down before the 16th.

DETROIT, MICH.

Special Correspondence to The Marine Record.

The Grummond steam barge Atlantic is loading lumber at Alpena for Toledo. The Atlantic was formerly one of the Grummond line passenger boats, but was changed into a freight last winter.

The freight business of the Union Transit Co.'s line, composed of the steamers Avon, Portage and Rochester, will be under the management of D. W. H. Moreland, general agent of the Northern Steamship Co. at this port.

The United States Steamer Fessenden is in dry dock for general overhauling and repairs. The Wyandotte is also undergoing repairs to her machinery at the Detroit Dry Dock Co.'s works, and the schooner H. D. Root is docked at the Springwell's yard.

Capt. Ryerse, the submarine diver who examined the wreck of the steamer Barnum, sunk in the Straits of Mackinac, reports that her cargo of corn has been sold by the underwriters to the Brantford (Ont.) Starch Works. Arrangements are now being made to take out the cargo, an improved cataraft pump having been ordered from New York. Work will begin in a few days. Capt. Ryerse reports the Barnum as lying in good shape, and there is nothing to prevent the boat being raised. He denies that steam pumps were placed on board the Barnum before she sank. All the tug Crusader did was to tow the Barnum into shoal water and take off her crew.

DULUTH, MINN.

Special Correspondence to The Marine Record.

No charters have been made here during the past week and vessel agents feel none too encouraged. But Duluth and Superior, with their wheat, ore and lumber

and established coal trade, will suffer less from dull trade than any other port.

Many vessel agents are looking for considerable activity in lumber. Although stocks at eastern points are large, it is argued that low wages, cheap iron and other material will stimulate building and cause demand for lumber from Duluth docks. Charters have been made here at \$1.75 per thousand.

Duluth vesselmen to-day organized the Vessel Agents Association of Duluth and Superior, for the purpose of securing uniform rates of freight in business. Capt. Alex. McDougall was elected president; J. W. Rose, vice president; C. W. Leland, secretary; and John P. Gordon treasurer.

Ice is still too solid for vessel trade at the head of Lake Superior, and no ore will be brought to docks for two weeks yet. Ore men look for better prices and a more active demand later in the season, and expect that the Lake Superior ore business will exceed that of last year.

The past week has witnessed a change for the better in the iron region. On the Mesaba range the Mountain iron and Rathbun mines have resumed with about 350 men and the Oliver will start in a few days with two steam shovels in the ore. Forces are being increased on the Vermillion range and the mines are being worked to about their full capacity. On the Menominee range the Aragon is at work with 275 men and will increase this number soon. If the present move to sell the great Chapin mine is carried through, this immense Menominee property will be in the active list. The Chapin is a non-Bessemer producer, and as yet there have been almost no sales of this class of ore, ores that will produce Bessemer steel controlling the market to a greater extent than in any preceding year. On the Marquette range no changes have taken place. Ore from this range will begin to go forward to docks this week. The Norrie mine on the Gogebic range has begun shipping to docks at Ashland, and has sent out about four hundred cars of ore already. The mine has about 275,000 tons in stock and will ship it all early in the season. It is employing 750 men, but will soon add more and will work steadily all season.

SAULT STE MARIE, MICH.

Special Correspondence to The Marine Record.

From present indications navigation will open on Lake Superior between April 25 and 30. No material changes have taken place in the condition of the ice west of here since the last reports, as the weather has continued cold. People arriving from St. Joseph's Island report eighteen inches of ice opposite old Fort St. Joseph. The channel is open from here to Point aux Pines, but there is considerable ice at that point. West of there, near Iroquois, there is a large space of open water. From Whitefish to about ten miles east the channel is open and navigation is open to Manistique and is expected to open to Gladstone in a day or two. The ice at Thessalon, Algoma Mills and all Georgian Bay ports is solid yet. From present indications boats can safely load to fourteen feet for the first trip through the canal. The fishing tug Annie Clark cleared for Batchawanna on Wednesday. It is not anticipated that she will have any trouble in getting to Whitefish Point.

CLEVELAND, O.

Special Correspondence to The Marine Record.

The Minnesota Line steamers will leave for Two Harbors as soon as favorable ice reports are received from the Soo.

Coal shippers have decided to charge the steamers that they load \$2.10 for fuel. Boats going light have fuel contracts with the Chicago & Pittsburg Gas Coal Co. at \$1.90.

The steamer Castalia, from Cleveland to Milwaukee, arrived all well on Tuesday with the first cargo of coal to enter that port this season.

The Globe Iron Works Co., are busy completing the large twin screw passenger steamer North West. Work is also progressing on her sister ship and the fleet of tugs building to the order of the Smith Towing and Wrecking Co., of this port.

There is actually no chartering being done at this port, and the same may be said of Buffalo, Chicago and Duluth. From the present outlook, May 1, when Lake Superior navigation opens, will be ample time for vessels to go seeking cargo.

At the meeting of dock managers held on Saturday the charge for discharging ore from vessels at all Ohio ports and Erie was reduced from 16 to 13½ cents per ton. The wages of ore handlers were reduced 1½ cents per ton a few weeks ago. Even in good times the figure charged by the dock owners were recognized as being too high, and credit is due Mr. B. L. Pennington more than any other man for keeping this mild form of extortion before the attention of vessel owners until the wrong had been righted.

Harvey D. Goulder, Esq., is attending court in Buffalo in the Northerner case.

Charles E. Motley, keeper of the life-saving station, has arrived here from Detroit: the late keeper, Capt. Distel, will again take up his former position with the Society for Savings.

Inman, of Duluth, has purchased from Hawgood & Avery the small propeller Belle P. Cross. She was on her first letter in last year's Lloyd's and valued at \$16,000, 211 tons net and built in 1870. The vessel has been well kept up and is still good property.

At the yards of the Cleveland Ship Building Co., the keel is laid for the new steamer for the Minch estate and preparatory work is being got out which will ensure a few months brisk employment to a large number of skilled men. The usual spring repair work has kept the engine and machine shops moderately busy as well as the extensive boiler works.

The Cleveland tug Joe Harris returned Wednesday after releasing the schooner H. D. Root from her stranded position, near South Bass Island, and towing her to Detroit for survey and repairs.

The Finance Committee of the Lake Carriers' Association formulated a wage card early last month and on the high classed steel boats the pay for chief engineers was fixed at \$100 per month. The engineers objected to this figure, and a few weeks ago their national president, Mr. George Uhler, headed a delegation of engineers which waited upon the officers of the Lake Carriers Association. This delegation was referred, it is said, to Secretary Keep, who would receive any communication from them. The delegation held themselves in readiness on Tuesday afternoon to meet the Finance Committee, at the offices of the president, Mr. James Corrigan, but as the day has not been arranged yet for this year, no meeting was held on Tuesday, and the request of the engineers for a better scale of pay will doubtless be considered at the next meeting of the Finance Committee.

Mr. Luther Allen, secretary and treasurer of the Globe Iron Works Co., was on Wednesday unanimously elected president of the Chamber of Commerce. In the galaxy of business talent included in the membership of the chamber there is none more fitted to hold the office of president than Mr. Allen. The good will of the members was also clearly evidenced by electing on a ballot Mr. Allen as one of the annual directors of the institution.

Mr. F. W. Wheeler, shipbuilder of W. Bay City, Mich., visited this port on Tuesday. The only work going on at his yards is the Detroit river ferry boat, and the report of contracts being about closed for ocean tonnage is away off. Mr. Wheeler has recently done noble work and borne out his full share of responsibility in trying through correspondence with members of both Houses, to throw light upon the obnoxious free ship bills now before Congress.

John Thomson has completed the brass rail and pipe fitting work on the new Northern Line passenger steamer North West. The remarks heard relative to the deck work are most flattering to the skill and workmanship which Mr. Thomson has displayed in putting up the ornamental and useful "fences" on the finest boat ever turned out of a lake ship yard.

Farasey & Marron, wharfingers, steamship agents and forwarders are starting out on a brisk season's business. They already hold the agency of all the principal freight and passenger lines trading to this port, and their fine warehouse and dock accommodation for freight and passengers, leave little choice for the managers of lines to place agencies elsewhere.

The D. & C. S. Navigation Co., and the B. & C. Line, are apparently entering upon a prosperous season. It is somewhat surprising to find both the Buffalo and Detroit Line steamers carrying so many passengers and receiving such large parcels of freight at this early stage of the season and only on the grounds of direct service with moderate charges can the volume be accounted for.

APPOINTMENTS OF MASTERS AND ENGINEERS.

Lehigh Valley Transportation Co., Buffalo, N. Y.: E. P. Wilbur—captain, James A. Brown; engineer M. H. Clark. Cayuga—captain G. Graser; engineer, A. J. Jones. Seneca—captain D. Driscoll; engineer, E. Hull. Saranac—captain, J. M. Todd; engineer, H. N. Wadleigh. Tuscarora—captain, M. H. Murch; engineer, D. Masten. Tacoma—captain, Wm. Williams; engineer, J. H. Lord. Oceanica—captain, Jas. Todd; engineer, C. Nise. Clyde—captain, A. J. Talbott; engineer, R. Fleming.

O. W. Blodgett, Bay City, Mich.: C. H. Bradley—captain, James Bennett; engineer, Adam Haig. Schooners, Mary Woolson—captain, Wallace Allen. Brightie—captain, F. H. Lennon. Goshawk—captain, M. Nagle. B. W. Jenness—captain, Thomas Turner.

Shores Lumber Co., Chicago, Ill.: Jas. H. Prentice—captain, Jas. J. Carr; engineer, M. O'Hara. Geo. W. Johnson—captain, Jas. Comstock; engineer, M. Mahr. Schooners, Middlesex—captain, P. T. Weimar. Halstead—captain, L. Davidson. Constitution—captain, L. Johnson.

West Division Steamship Co., W. H. Wolf manager, Milwaukee, Wis.: Fred Pabst—captain, W. Lund; engineer, J. Bennett. W. H. Wolf—captain, D. Sullivan; engineer, T. Albrighton.

Nelson Holland, Buffalo, N. Y.: C. F. Curtis—captain, Jas. Cunningham. Schooners, Isabel Reed—captain, Peter Johnson. T. S. Fassett—captain, Albert Renders. N. C. Holland—captain, Peter Keischgens.

Edward Smith, Buffalo, N. Y.: Saml. Marshall—captain, Jas. T. Kinney; engineer, A. Leach. Samoa—captain, W. W. Stewart; engineer, Lewis Minnie.

C. W. Elphicke & Co., Chicago, Ill.: Arthur Orr—captain, C. Z. Montague. Ohio—captain, John Isbister. Josephine—captain, John Massey. Schooners, T. L. Parker—captain, Jas. Langan; Gifford—captain, E. J. Kohnert. C. P. Minch—captain, Ed. Myers. Cheney Ames—captain, Thos. Myers.

Niagara Navigation Co., Toronto, Ont.: Chippewa—captain, John McGibben; engineer, Robert McCall. Cibola—captain, W. H. Solmes; engineer, William Walsh. Chicora—captain, James Harbottle; engineer, H. Parker.

W. H. Loutit, Grand Haven, Mich.: Pentland—captain, Thos. McCambridge; engineer, John Farnham.

Matthews Line Toronto, Ont.: Niagara—captain, James Morgan; engineer, M. D. Tetro. Clinton—captain, —; engineer, James S. Adams. Schooners, Lisgar—captain, C. Coons. Grimsby—captain, G. W. Maitland. Emerald—captain, John Philp. Clara Youell—captain, W. J. Colwell.

George W. Brown, Port Arthur, Ont.: Cambria—captain, P. C. Telfer; engineer, John Doran.

John Rice, Buffalo, N. Y.: Robert Mills—captain, Robert Drury; engineer, John H. Maybury.

Huron Barge Co., Cleveland, O.: Pathfinder—captain, W. B. MacGregor; engineer, C. A. Heisner. Barge, Sagamore—captain, John Weeks.

Peck, Gray & Co., Cleveland, O.: Simon Langell—captain, Harry Zealand; engineer, Anthony Ryan. Kalkaska—captain, Henry Fish; engineer, George Miller. Schooners, Arenac—captain, Henry Davis.

J. C. Gilchrist, Cleveland, O.: City of Genoa—captain, J. L. Weeks; engineer, James Mitchell. City of Naples—captain, George Bell; engineer, Charles Sharp. John Craig—captain, C. Y. Gunderson; engineer, James Birney. R. E. Schuck—captain, Olaf Olesen; engineer, C. Williams. J. C. Gilchrist—captain, Henry Moody; engineer, R. Broderick. John B. Lyon—captain, Thos. L. Benitau; engineer, Edward Comiskey. Cumberland—captain, J. C. Thompson; engineer, Henry Mitchell. Columbia—captain, Benjamin Mosher; engineer, John Fritz. Hiawatha—captain, J. C. Byers; engineer, Henry Stone. Oregon—master unassigned—engineer, E. D. Butler. Waverly—master unassigned; engineer, Charles Martin. Schooners, H. D. Alverson—captain, H. D. Gunderson. B. F. Bruce—captain, Charles Olsen. W. F. Crosthwaite—captain, Martin Janssen. Verona—captain, Philip Deroy. S. H. Foster—captain, D. C. Sullivan. M. S. Bacon—captain, J. B. Minsky. Y. P. Sheldon—captain, Frank Perew. S. L. Watson—J. C. Ellis.

B. Whitaker & Sons, Detroit, Mich.: B. Whitaker—captain—August Ames; engineer, Jacob Sutter. Schooner, S. V. R. Watson, captain, Alfred Eades.

H. J. Johnson, Cleveland, O.: H. J. Johnson—captain, Charles Miner; engineer, Dan Connolly. V. Swain, not in commission. Schooner, Helvetia—captain, Frank Rice.

Edward Buckley, Manistee, Mich.: Edward Buckley—captain, Charles Gnewuch; engineer, Richard Winkler.

Brown Steamship Co., Cleveland, O.: Castalia—captain C. C. Allen; engineer, James Hay.

Curtis & Brainard, Toledo, O.: Mohegan—captain, William Hogan; engineer, William Dinsmore. Cherokee—captain, John Hogan; engineer, D. S. Foster. Miami—captain, J. A. Ward; engineer, E. Flanigan. Schooners, Mingoe—captain, A. Snelynove. Chippewa—captain, Wm. Barrett.

BULLETIN ON THE CAPSTAN-HEAD.

The U. S. life saving station at Sheboygan, Wis., opened with the following crew:—Capt. Nequett, Adolph Fountain, M. Megle, Joseph Sanville, Samuel Gagon, Frank Sanville, John Stockdyke and John Vanderwart.

The members of the life saving crew of Thunder Bay Island are as follows:—Captain, J. D. Persons; serfmen, E. P. Motley, Eli Knudson, John Bryan, W. H. Durkee, George Brown, Charles Warwick, Martin Nelson and Walter Anning.

The schooner Theodore Voges, which lost her fore-rigging in the collision with the Majestic in the St. Clair River, is being repaired at Dunford & Alverson's dry-dock at Port Huron. As one man was fatally injured in the collision, it is said that it would only have been what the circumstances of the case demanded if the steamer had stood by the schooner instead of going right ahead after the collision.

It is learned that the insurance on the F. & P. M. No. 2, which went ashore above Long Point in the fall of 1892, about the time that the Newburg was lost there, has never been paid. The cost of releasing and repairing her was about \$17,000 and suit has been brought against the companies. The trial will come off in Detroit sometime this month.

The shipments of grain from Chicago by lake for the first week of navigation are larger than for any first week in April in the history of lake business. The number of cargoes was 62, with a total capacity of 4,124,639 bushels.

For the first quarter of this year orders for about 200,000 tons of new shipping were placed with yards on the Clyde. 58,312 tons were launched, leaving the river well provided for the rest of the year. The contracts were made at nearly the lowest prices on record.

Lumber at Chicago opened at the lowest rates in the history of trade. Several charters have been made from Muskegon at \$1 and \$1.12½, which is 13½c lower than the opening rates last season. The rate from Ludington has been fixed at \$1.25 and from Manistee at \$1.37½.

EXPIRATION OF INSPECTION CERTIFICATES.

Steamers in the several lake districts whose certificates expire from April 14 to 21, are as follows:

CHICAGO, ILL.			
F. E. Spinner,	Apr. 14	Excelsior,	Apr. 18
Lansing,	" 14	B. and C.,	" 18
James A. Prentice,	" 14	North Star,	" 19
F. H. Prince,	" 14	Saranac,	" 19
Philip Minch,	" 14	Byron Whitaker,	" 19
Waldo Avery,	" 15	Tioga,	" 19
Samoa,	" 15	Hiawatha,	" 19
George T. Hope,	" 15	Niko,	" 19
John B. Lyons,	" 15	City of Rome,	" 19
Mecosta,	" 15	J. Emory Owen,	" 19
Annie Laura,	" 15	John J. Hill,	" 19
Charles Halladay,	" 17	D. M. Wilson,	" 20
S. R. Kirby,	" 17	Northern Wave,	" 20
Iron Age,	" 17	Avon,	" 20
Schoolcraft,	" 17	Rochester,	" 20
William L. Ewing,	" 17	S. S. Wilhelm,	" 20
Protection,	" 17	Roumania,	" 20
A. Folsom,	" 17	City of Cleveland,	" 21
Pasadena,	" 17	Walter Vail,	" 21
A. Miller,	" 17	Walter L. Frost,	" 21
Rube Richards,	" 18	Wm. A. Haskell,	" 21
Germanic,	" 18	Escanaba,	" 21
A. G. Lindsay,	" 18	E. P. Wilbur,	" 21
Brazil,	" 18	Cuba,	" 21
Old Rocks,	" 18		

DETROIT, MICH.			
Adele	Apr. 14	Nellie Torrent,	Apr. 19
Ysleta,	" 14	Forest City,	" 20
Atlantis,	" 14	R. J. Hackett,	" 20
City of Mt. Clemens,	" 14	Dawn,	" 21
City of the Straits,	" 15	Newsboy,	" 22
A. Folsom,	" 15	Chauncey Hurlbut,	" 24
John E. Hall,	" 17	Elva,	" 24
F. S. Sterling,	" 17	O. Wilcox,	" 27
A. G. Lindsay,	" 18	Lena,	" 28
Champion,	" 18	Quickstep,	" 29

BUFFALO, N. Y.			
Badger State,	Apr. 14	Charles A. Street,	Apr. 18
John Owen,	" 14	Aztec,	" 18
Edward Smith,	" 14	C. F. Curtis,	" 18
Montana,	" 14	Russia,	" 19
Owego,	" 15	W. H. Gratwick,	" 19
Townsend Davis,	" 15	Sitka,	" 19
H. J. Jewett,	" 15	Wissahickon,	" 19
New Orleans,	" 15	Conemaugh,	" 19
Norwalk,	" 15	Ismalia,	" 19
Russell Sage,	" 17	John C. Gault,	" 20
Erie,	" 17	George Presley,	" 20
Gogebic,	" 17	Titania,	" 20
Portage,	" 17	Florida,	" 20
Belle P. Cross,	" 17	Argyle,	" 20
Marquette,	" 17	A. L. Hopkins,	" 20
Colonial,	" 17	A. A. Turner,	" 20
America,	" 18	Sarah E. Sheldon,	" 20
Seneca,	" 18	New York,	" 20
Cayuga,	" 18	Hesper,	" 20
Northern Queen,	" 18	Maurice B. Grover,	" 21
J. C. Ford,	" 18	Gladstone,	" 21
John C. Pringle,	" 18	Philadelphia,	" 21
Northern Light,	" 18	Alaska,	" 21
North Wind,	" 18		

CLEVELAND, O.			
Eli,	Apr. 14	Walter,	Apr. 18
Robert Wallace,	" 14	Col. Bartlett,	" 18
Joe Harris,	" 15	Minnie D.,	" 19
City of Sandusky,	" 15	Burlington,	" 19
Erwin,	" 15	Continental,	" 19
Dan Connelly,	" 15	City of Toledo,	" 19
Wm. L. Wetmore,	" 15	Specular,	" 19
C. H. Green,	" 17	A. Andrews, Jr.,	" 19
Tuscarora,	" 17	Pontiac,	" 19
Keystone,	" 17	H. B. Wilson,	" 19
Alex. Nimick,	" 17	Uncle Sam,	" 19
Andaste,	" 17	Charles Castle,	" 20
Mohawk,	" 17	Sparta,	" 20
John N. Glidden,	" 17	Hope,	" 20
Queen of the West,	" 17	Jim Sheriffs,	" 20
German,	" 18	State of Ohio,	" 21
Cambria,	" 18	State of New York,	" 21
Corona,	" 18	S. Neff,	" 21
Corsica,	" 18	Rufus P. Ranney,	" 21
Saxon,	" 18	Kaliyuga,	" 21
Briton,	" 18		

A repetition of names are given in the Detroit and Chicago lists and which port the last inspection certificate was granted at we are unable to state, however the documents expire on the given date.

THE KEARSARGE.

They may name another Kearsarge,
They may build her walls of steel,
They may make her white and shapely
From her masthead to her keel.

They may clothe her ribs with armor,
They may give her strength and speed,
That may some time for the country,
Fill the measure of its need.

They may give her wondrous cannon,
With the thunder in their tones,
And the lightning in their missiles,
That the deadly Storm King owns.

They may make her Queen of Terror,
Make her mistress of the sea,
Give her souls of tested valor,
Crown her prow with victory.

But with all their modern triumphs,
And their blazonry of war,
They can't revive the Kearsarge,
Wrecked and dead on Roncador.

—New York Sun.

DEPTHS OF WATER AT LAKE PORTS.

The Chief of Engineers, U. S. Army, has issued bulletin No. 3, giving the particulars, including depth of water at all lake harbors, channels and navigable tributaries, corrected up to April 1, 1894. This information is reliable and official, so that in chartering for any United States port, owners, agents and masters may be guided by the following figures:

LAKE SUPERIOR.

Agate Bay (Two Harbors) is now a protected harbor where vessels are secure during gales from any quarter. Ashland, Wis., breakwater 7,363 feet; available depth 17 feet up to the ore docks.

Duluth, Minn., there is 17 feet in the canal entrance and over the greater portion of the harbor basin. Rice's Point channel to West Superior and the channel to Grassy Point and West Duluth mills, 16 feet.

Eagle Harbor, Mich., the entrance channel is 14 feet in depth and 130 feet wide.

Grand Marias, Mich., least depth, 13.6 feet at low water.

Grand Marias, Minn., at low water 16 feet.

Marquette, Mich., breakwater 2,900 feet; anchorage area has a depth of 15 to 30 feet.

Ontonagon, Mich., bar has shoaled, depth 13 feet at low water.

Portage Lake and Lake Superior Canals, Mich. Sault canal draft, except a short stretch in Portage river where it lacks about 4 inches. Each winter a bar forms at the Lake Superior entrance leaving only about 11.5 feet draft over it. This is dredged away promptly on the opening of navigation. A 16 foot channel 70 feet wide from bay to lake has been approved by the Chief of Engineers and the Secretary of War.

St. Louis river, Minn. and Wis., to five miles above Grassy Point railroad bridge 100 feet wide and 16 feet deep.

Superior, Wis., entrance 180 feet wide and 17 feet deep at low water. Main channel to Conner's Point, least depth 15 feet and 150 to 500 feet in width. To docks at Old Superior, 15.5 feet at low water. To Allouez Bay, 16 to 19 feet. From West Superior dock line to a junction with the Duluth channel near West Duluth, 16 feet or more at low water.

ST. MARY'S RIVER.

Hay Lake channel, approaching completion, depth of 20 feet and 300 feet in width.

St. Mary's Falls canal, limit of draft close of season 1893 was 14.43 feet. Improvements now in progress will give 21 feet of mean stage of water and a canal lock 800 by 100 feet.

Round Island Shoals, ordinary depth 16 feet, improvements nearly completed, will give a channel 300 feet wide, 21 feet deep.

Little Mud Lake, Reef abreast of Sailors' Encampment Island and 1½ miles below the Encampment, will be improved to 21 feet depth and a 300 foot channel.

LAKE MICHIGAN AND GREEN BAY.

Ahnapee, Wis., a governing depth of 10 feet to the bridge, work progressing to obtain 12 feet. Calumet harbor, Ills., a channel 250 feet wide by 16 feet deep. On the basis of the low water level of 1847 which is Chicago City datum. Illinois Steel Company's private harbor 16 feet, depth intended 20 feet; Calumet River 16 feet to the railroad bridges, 15 feet to One Hundred and Third street, 14 feet to One Hundred and Sixth street, 13 feet to One Hundred and Eighth street, thence to Hammond, Ind., not exceeding 7 feet.

Cedar River, Mich., in 1892 there was a 40 foot channel least width, and 10 feet deep, private dredging has since given better water.

Charlevoix, Mich., available depth 13 feet at piers, upper channel 12 feet.

Chicago Harbor, Ill., harbor of refuge, 18 to 32 feet; outer harbor 14 to 15 feet at low water; Chicago River, 15.5 feet from Rush to Sixteenth street; 15 feet to South Halstead; 14.5 feet to Fuller street; 12 feet to Laurel street and 8 feet to head of navigation. On the north branch 15.5 feet to Chicago avenue; 15 feet to North avenue; 14.5 feet to Clybourne place; 13 feet to C. & N. W. R. R. bridge; 12 feet to Fullerton avenue and 8 feet to Belmont avenue, which is the head of navigation; Chicago river entrance 18 feet at extreme low water, to the first bridge.

Frankfort, Mich., navigable depth of 16 feet between piers, 200 feet wide; 15 feet on bar. Further dredging is intended.

Grand Haven, Mich., width of entrance 390 feet;

outer bar 18 feet; shoalest bar in front of entrance 14 feet; depth between piers 16 feet, and 20 feet inside.

Green Bay, Wis., channel 200 feet wide, 15 feet deep; work in progress to give a depth of 16 feet.

Holland, Mich., ordinary depth 13 feet, shoaling in winter to 7 feet and dredged out again each spring.

Kenosha, Wis., available channel about 15 feet; this depth is to be maintained.

Kewaunee, Wis., 15 feet deep.

Ludington, Mich., 16 feet.

Manistee, Mich., navigable depths between piers, 16 feet; river 13 feet.

Manistique, Mich., between piers 13 feet; 11 feet on bar; private dredging has given better water since May 1892.

Manitowoc, Wis., 17.5 feet at entrance and 15.5 feet between the piers.

(TO BE CONTINUED.)

NOTICE TO MARINERS.

REMOVAL OF OAKVILLE LIGHTHOUSE.—In consequence of damage done by storm to the outer end of the main breakwater pier at Oakville, county of Halton, Lake Ontario, it has been necessary to move the lighthouse tower, and the block on which it stands, a distance of 46 feet inwards from its last location. It is now 126 feet from the end of the pier and vessels entering will require to allow for this to clear the end of the pier.

WM. SMITH,

Deputy Minister of Marine and Fisheries.

Department of Marine and Fisheries, Ottawa, Can.,
March 21, 1894.

UNITED STATES OF AMERICA—NORTHERN AND NORTH-WESTERN LAKES.

NIAGARA RIVER RANGE (FRONT) LIGHT-STATION.—Notice is hereby given that, on or about April 20, 1894, Niagara River Range (front) Light, on the E. bank of the Niagara River, near its head, New York, will be moved to a new structure erected on the berm bank of the Erie canal 71 feet S. of the present location of the light. The light will be exhibited at an elevation of 54½ feet above lake level.

The new structure is an open framework of wood, with a small house at the top from which the light will be exhibited.

The new range line is intended to mark the channel of deepest water where it has been improved below the channel which is marked by Horseshoe Reef Light-house.

By order of the Light-house Board:

JAMES A. GREER,

Rear-Admiral, U. S. Navy, Chairman.

Office of the Light-House Board, Washington, D. C.,
April 7, 1894.

SUPERIOR BAY POST LIGHTS, WISCONSIN.—On the opening of navigation 1894, the front light of the range on Wisconsin Point is to be moved a few feet to the westward, so that range line will pass nearer to axis of channel and further from old lighthouse dock than heretofore. This range will lead well past the old dock and vessels should then head up so as to pass to northward of Quebec Channel light.

Information has been received that the wreck of a vessel lies in 18 feet of water in the harbor of Presque Isle, Michigan, one-half mile east of the Range Lights and about 300 feet to northward of range line.

Portions of this wreck are within 7 feet of the surface. A buoy will be placed to mark this spot as soon as possible.

W. W. MEAD.

Commander U. S. N.,
Inspector 11th L. H. District.

DOES ADVERTISING PAY?

A book entitled "How to Get Money," published way back in the fifties, contains the following on advertising:

"Whatever your occupation or calling may be, it is needs support from the public, advertise it thoroughly and efficiently in some shape or other that will arrest public attention. I freely confess that what success I have had in life may be attributed more to the public press than to nearly all other causes combined. There may possibly be occupations that do not require advertising, but I cannot well conceive what they are. Men in business will sometimes tell you that they have tried advertising and it did not pay. This is only when advertising is done sparingly and grudgingly. Homeopathic doses of advertising will not pay, perhaps, it is like a portion of physic, making the patient sick, but effecting nothing. Administer liberally and the cure will be permanent. Some say they cannot afford to advertise. They mistake; they cannot afford not to advertise. In this country, where everybody reads the newspapers, it will be seen that these are the cheapest and best media through which persons can speak to the public where they are to find their customers. Put on the appearance of business and generally the reality will follow. The farmer plants his seed, and while he is sleeping his corn and potatoes are growing. So with advertising. While you are sleeping or eating or conversing with one of your customers, your advertisement is being read by hundreds and thousands of persons

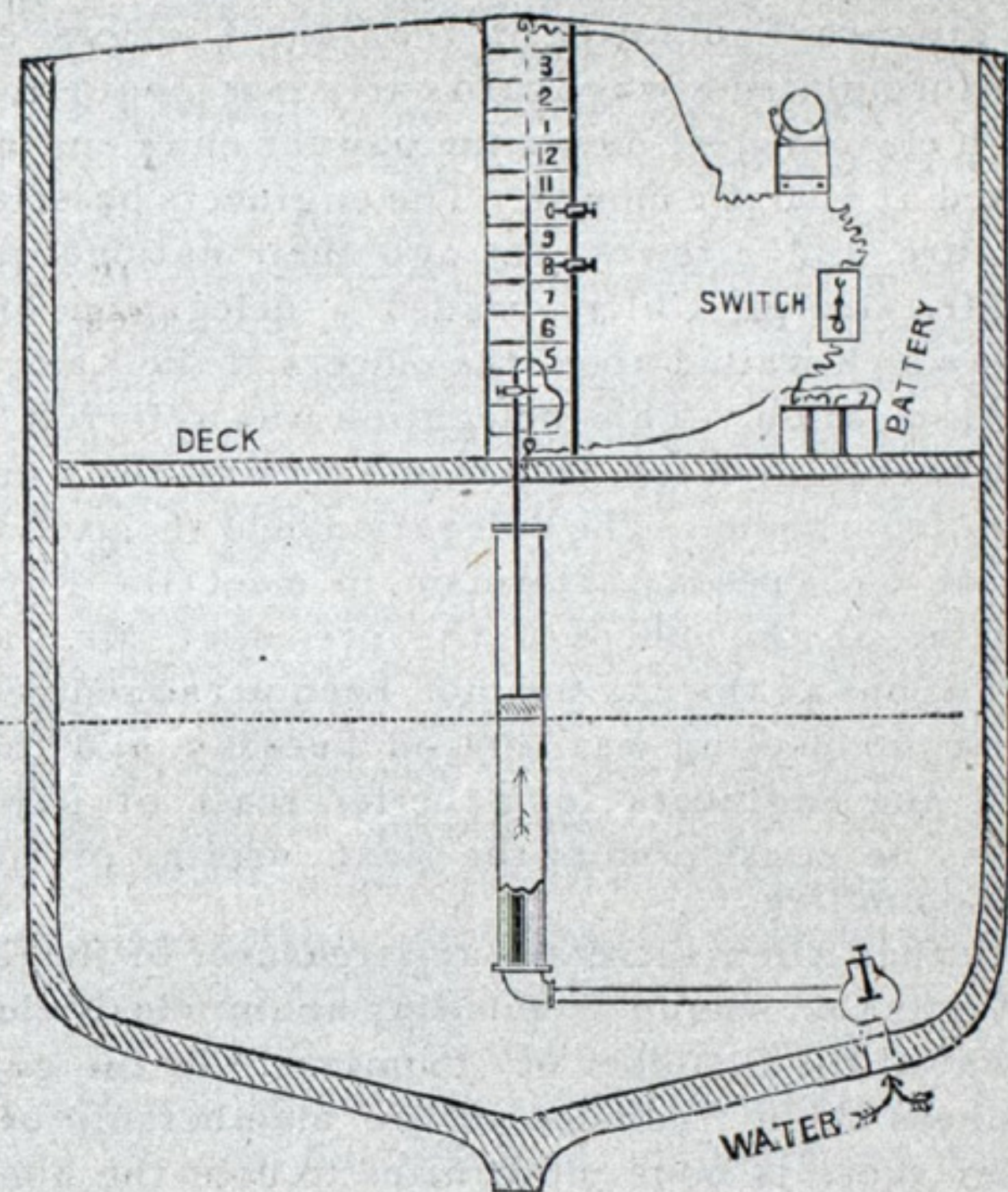
who never saw you or heard of your business, and never would, had it not been for your advertisement appearing in the newspapers."—Free Press, Holyoke, Mass.

THE PATTERSON DRAFT INDICATOR.

ILLUSTRATED.

The accompanying illustration of a draft indicator shows one of the most simple yet correct methods of obtaining the exact draft of a vessel when lying in disturbed water, or at night time when loading or discharging cargo, that has ever come before the lake marine.

The indicator can be set to ring up an alarm signal at any desired draft, either end of the vessel, and the alarm is continuous until again attended to and set to another mark. The inventor, Mr. Patterson, of Manistee, Mich., has placed these indicators on all the large steamers of the Inter Ocean Transportation Co., of Milwaukee, and their general manager, Capt. J. C. Rick-



etson, speaks in very high terms of the efficiency of the appliance. Capt. John Mitchell, of Cleveland, and Mr. D. C. Whitney, of Detroit, also state that the indicator is a necessary adjunct to the equipment of well-found large freight steamers.

The Patterson Indicator Co. would no doubt flourish in the manufacture of their invention if a Plimsoll load line mark had to be watched on the lakes; however, the exact draft is frequently required for harbors and canals, and it is more than a convenience to find vessels furnished with a draft indicator, especially where cargoes are handled in so limited a time as is customary on these waters. The inventor further points out the utility of his invention by stating that when a vessel grounds in shoal places the change or rise of the water may be more distinctly noted by watching the indicator than by any other means that could be used.

METALLIC PACKING.

ILLUSTRATED.

When practical men make an advance on appliances grown reputable alone through custom, the result is likely to be a lasting benefit. Herein the Stone & Hannah combination metallic piston and valve rod packing seems to have worked out its own redemption, for it is

now in use in a large number of lake steamers purely on its own merits.

There is perhaps, nothing under the engineer's care that requires greater attention, or is liable to get more frequently out of order, than piston and valve stem packings. This packing is specially adapted to piston rod, valve stems, steam



hammers, ice machines and air pump engines. It is made in rings of all sizes, and with ordinary care it is claimed will last for five years. It is composed of interior cylinder of soft metal surrounded by cylinder of gum rubber and canvas held firmly together by a dovetailing process. To advance the popularity of their packing the inventors, Messrs. Stone & Hannah, are willing to give thirty days' trial on all orders, claiming that wherever the packing is used, supplemental orders are certain to follow.

A handsome blotter, with celluloid cover showing a cut of the U. S. S. Massachusetts and a list of the vessels of the new navy furnished with "Providence" windlasses is being sent out by the American Ship Windlass Co., Providence, R. I.

MARITIME LAW.

UNITED STATES vs. THE HAYTIAN REPUBLIC.
Circuit Court of Appeals, Ninth Circuit. December 18, 1893.

1. ADMIRALTY PRACTICE—LIBEL OF FORFEITURE—SECOND SEIZURE. A vessel which is seized under a libel of forfeiture for violating the revenue laws, and is released on bond, is not subject to seizure in a different district under a libel alleging other violations committed during the same period. *The Langdon Cheves*, 2 Mason, 59, distinguished. 57 Fed. 508, affirmed.

2. SAME—RELEASE—BOND—VALIDITY. The release bond of a vessel is not rendered invalid by the mere omission from the condition clause of the specified sum to be paid in case of default, when the bond contains a distinct obligation to pay the appraised value. 57 Fed. 508, affirmed.

Appeal from the District Court of the United States for the District of Oregon.

In Admiralty. Libel of forfeiture against the steamship Haytian Republic (the Northwest Loan and Trust Co., claimant) for violation of the revenue laws. Exceptions to the libel were sustained. 57 Fed. 508. The United States appeal. Affirmed.

Before McKenna and Gilbert, Circuit Judges, and Hanford, District Judge.

Gilbert, Circuit Judge. On the 6th day of June, 1893, the steamship Haytian Republic was seized for forfeiture by the United States in the District Court of the United States for the district of Washington, for alleged violations of the revenue laws of the United States, by smuggling and clandestinely introducing prepared opium, and for violation of the laws relating to the importation of Chinese laborers, committed between the 28th day of September, 1892, and the 28th day of May, 1893. The vessel was thereupon claimed by her master and an appraisal was had; upon the 9th day of June 1893, the vessel was released upon the claimant's bond for her value as appraised, and she thereupon proceeded upon her business. Upon the 3d day of July, 1893, at the port of Portland, Ore., the vessel was again seized by the United States, and a libel of information was filed by the United States attorney for forfeiture for acts set forth in the libel, and other acts appearing. The acts charged in the libel were of two classes: First, acts of a similar nature to those for which she was seized in the district of Washington, and occurring prior to the date of her seizure there; second, acts in violation of the Chinese exclusion laws, committed subsequent to her release from the former seizure. The claimant answered, denying the charges of violation of the Chinese exclusion acts, but filed exceptions to the other counts of the libel, setting up in defense thereof, the former seizure and the pendency of the proceedings for forfeiture in the district court for the district of Washington.

All of the exceptions were sustained by the court. Trial upon the issues raised by the answer resulted in a decree for the claimant. From the decree, the United States brings this appeal, assigning as error the decision of the district court in sustaining the exceptions to portions of the libel. It is the appellant's contention that the pendency of the prior proceeding is no bar to the prosecution of the present suit, for the reasons—First, that the causes of suit are not the same, since the acts charged in the libel in the district court of Oregon, while covering the same period as those charged in the libel in the district court of Washington, are nevertheless distinct and separate therefrom; and, second, that the former proceeding so pleaded is pending in a court of a different jurisdiction from the present proceeding, and could not, therefore, be pleaded in bar of the latter, even if the two causes of suit were the same. The decision of these questions brings under consideration the nature of the proceeding whereby the United States have seized this vessel for condemnation and forfeiture. The suit for forfeiture is a proceeding in rem. It can only be brought in the district court of the United States. The court of the district in which the seizure is had acquires exclusive jurisdiction of the property seized. The release of the vessel upon the bond for value does not change the nature of the proceeding. The bond so given takes the place of the vessel, and the court retains jurisdiction over the subject matter of the suit, to the same extent and with the same effect, as if the vessel still remained in custody of the court. The stipulation for value is given in cases where suit is brought, not to enforce a partial lien or charges against the vessel, but to recover the property itself, or to sell the same, as in the present case. The bond in such a case is a pledge or substitute for the property, "as regards all claims that may be made against it by the promotor of the suit."

U. S. vs. Ames, 99 U. S., 36. There can be no doubt that the United States, the promotor of the suit in the district of Washington, could have charged against the vessel all the offenses against the revenue and immigration laws that are included in the libel filed in the district of Oregon. Those offenses if not known to the libellant at the time of the seizure and filing the libel, could have been added by new counts to the libel at any time before the final decree. Admiralty Rule 24; the *Marina Flora*, 11 Wheat, 38. No authority is cited in which the question now before the court has been precisely decided. It was held in the court below that the

jurisdiction acquired by the court first seizure is exclusive. It would seem, from the nature of the proceeding, that this must be so. If the vessel remained in custody of the court first seizing the same, all litigation affecting it, and all remedies of the United States for prior violation of its revenue, immigration or navigation laws, would be necessarily drawn into that court. The right and remedies of the United States ought not to be enlarged from the fact that the vessel has been released upon claim made, and bond given, so long as the United States have the bond for value upon which to satisfy its demands. In the case of U. S. vs. Ames, 99 U. S., 52, the court said of such a bond:

"It became the substitute for the property, and the remedy of the libellants, in case they prevailed in the suit in rem for condemnation; was transferred from the property to the bond or stipulation accepted by the court as the substitute for the property seized."

There is authority for holding that in case of misrepresentation or fraud in obtaining the release of the vessel seized, or where the order of release was improvidently given, without proper knowledge of the real value of the vessel, or without proper appraisal thereof, the vessel so released may be recalled before final decree in the court in which the seizure was had. *The Virgo*, 13 Blatchf., 90; *The Wanata*, 95 U. S., 611. But there is no authority for holding that, in the absence of such special ground for reviewing the order of release, the United States may in the same court, or in any other court, in any way pursue or seize the vessel after she is so released, except for acts thereafter committed. A second seizure would clearly be oppressive and burdensome, and would be, as we hold, a departure from the general rules of procedure that obtain in proceedings in rem. The presence of the res in the court first seizing the same draws to that court all litigation affecting it.

The doctrine of the case of the *Langdon Cheeves*, 2 Mason, 50, cited by the appellant, is not perceived to be in conflict with this view, or applicable to this case. The question there before the court was whether upon seizure and release to the owner upon his bond, a vessel became discharged of the liens for seamen's wages. The court held that after such release the vessel remained in the hands of her owner, liable for all liens legally attaching to her. It may be conceded, in the case before the court, that the Haytian Republic, when released in the district of Washington, was not therefore discharged of existing liens created by operation of law, or by the act of her owners.

It is contended that the exceptions should have been overruled, for the reason that the record filed in support of the same discloses the fact that no valid or legal bond was filed in the district court of Washington upon release of the vessel therein. The defect in the bond consists in the omission from the clause containing the condition of the obligation of the specified sum that shall be paid by the obligators in case of default. There is in the bond, however, a distinct obligation upon the part of the persons signing the same to pay a sum equal to the appraised value of the vessel, and we see no reason why a decree may not be taken against the stipulators for that amount. If the bond were fatally defective in form, as claimed, it would seem that that fact would not render the proceedings in the district court of Washington void, but would afford that court a reason for recalling the vessel, or subjecting her to a second seizure in the same court, as indicated in the authorities cited above.

The decree is affirmed.

HARBOR MASTER AT CHICAGO.

The collector of customs at Chicago is preparing a report for the Secretary of the Treasury on the advisability of appointing a government harbor master for the port of Chicago, and taking the control of vessel interests out of the hands of the city. The vessel men some time ago suggested that the captain of the new revenue cutter, which will be ready for service in Chicago soon, be made harbor master, and the Treasury Department called upon the late collector of customs for some recommendations on the subject. He, however, was about to retire from the office and left the matter to his successor, Mr. Russell, who will not state the burden of his report until duly authorized from Washington. The feeling is prevalent, however, that a federal officer ought not influence or in any way control the jurisdiction of a municipality.

NEW LAKE LINE ORGANIZED.

A new transportation line has been organized in Detroit under the title of the Duluth & Ogdensburg Transit Co. The line is composed of the steamers Ohio, Ford and Saginaw Valley, and will operate as the Lake Superior end of the Central Vermont railroad, competing for west-bound freight from all points from Cleveland to Duluth. The business of the line at the main office, viz., Detroit, has been placed in the hands of Capt. Eber Ward, one of the best known and most popular line

managers on the lakes. For fifty years Capt. Ward has been identified with lake interests. Always an active and observing business man, he has gained a knowledge of people and affairs in transportation circles that peculiarly fits him for his present duties. For ten years as manager of Ward's Detroit and Lake Superior Line, he made handsome dividends in many cases when others found it difficult to pay running expenses, and he takes hold of the affairs of the new line with all the vim of an experienced manipulator.

UNDER THE BRITISH FLAG.

The export of grain from the port of New York during the year 1893 amounted to 55,768,726 bushels. The report prepared for the New York Produce Exchange says:

Of this grain three cargoes were sent out in sailing vessels, 171,427 bushels—one (British) carried 107,705 bushels and two (German) carried 63,662 bushels; not one American. By steamers there were sent off 55,597,299 bushels, in 1022 cargoes, in 324 vessels. Of these there was one American, the *Chester*, which took 16,357 bushels of wheat to Southampton. But there were 217 British vessels employed, which carried 604 cargoes, amounting to 34,259,656 bushels, a great deal more than half the export. Next came the Germans with 40 vessels, which carried 4,292,737 bushels in 128 cargoes. The Dutch had 11 vessels and took 92 cargoes, amounting to 4,651,111 bushels. The Belgians had 12 vessels and took 76 cargoes, or 5,240,242 bushels. The French had 15 vessels employed, which took 2,400,269 bushels in 43 cargoes. The Portuguese had 6 vessels and took 29 cargoes, in all 2,213,108 bushels. Four Norwegian vessels took 124,502 bushels; 7 Spanish took 597,149 bushels and 6 Italian 813,516 bushels.

The *New York Journal of Commerce*, commenting on the above statement, says that it is erroneous in a singular particular. The steamship *Chester*, of the American line, is not an American vessel. She still flies the British flag. So it would appear that not a bushel of the 55,768,726 exported last year from New York was carried on an American vessel. The *Philadelphia Record*, commenting on this shameful showing, says: "We have the trees and the iron and the copper with which to build ships. Here in Philadelphia we can turn out vessels as good as any that sail the seas, either for purposes of peace or war. We lack nothing in the way of men or means to do our own carrying trade, except to cut the bonds with which we have so bound ourselves that every puny little maritime country in the world may get the better of us."

MILWAUKEE WINTER SHIPMENTS BY LAKE.

During the month of February the Ludington, Grand Haven & St. Joseph line steamers carried out of Milwaukee 188,962 barrels of flour, 10,831 bushels of wheat, 278,138 bushels of barley, 11,395 bushels of rye, and 296,440 bushels of oats. In March the steamers carried out 270,110 barrels of flour, 2,500 bushels of wheat, 452,344 bushels of barley, 42,900 bushels of rye, and 309,500 bushels of oats. This brings the total shipment eastward from Milwaukee via the east shore routes during the four winter months up to 811,401 barrels of flour, 19,397 bushels of wheat, 971,108 bushels of barley, 100,460 bushels of rye, and 1,211,232 bushels of oats. The great bulk of the grain, which aggregated 2,302,177 bushels of all kinds, was carried by the Flint & Pere Marquette steamers to Ludington. Once upon a time the Detroit and Milwaukee route boasted a fine elevator at Grand Haven, but it burned down and the marked spirit of economy which characterizes the management of the route has thus far prevented its reconstruction. But the Ludington and St. Joseph routes gain what the Grand Haven route loses by such a course.

PETROLEUM AS FUEL FOR STEAMSHIPS.

The British steamship *Baku Standard*, a bulk oil carrier, arrived at Philadelphia recently from Shields, England, having burned on the passage liquid fuel only. The trip was an unusually trying one, the vessel having been caught in drift ice and made the long passage of 26 days. The oil (petroleum residuum) is sprayed by a steam jet, and the boilers are protected by brick. The consumption was about 20 tons for every 24 hours. The residuum was from Russian oil. The number of firemen required was reduced by 12, there being on duty only two boiler tenders and two greasers at a time. The *Baku Standard* registers 3,705 gross tons, and is 330 feet long, 43 feet beam, and 23 feet depth of hold. She carries over 1,200,000 gallons of petroleum in bulk, and trades to Russian ports as well as the United State for oil.

PATENTS.

Screw-propeller. Fritz Otto, Altona, Germany.

Screw propeller. Alfred W. Case, Highland Park, Conn.

Marine-engine governor. John W. Winters, St. Paul Minn., assignor of five-eighths to Albert J. Kos, Jerry Webster, Edmund R. Greenwood, Deville H. Kent, and John Gelina, same place.

THE MARINE RECORD

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THE MARINE RECORD stated truthfully the prevailing conditions of the transportation outlook and the views of some of the principal vessel owners on the delayed opening of navigation three or four years ago, when the prospects of clearing running expenses looked even brighter than they do at the present time. The marine engineers were somewhat skeptical and some at least took umbrage at our stating the facts as presented and reiterated by employers at that time relative to the season or month's wages card framed by the committee of the Vessel Owners' Association. Now similar conditions exist and we ask our engineer subscribers to act with circumspection, if action is considered essential to their welfare. THE RECORD firmly, consistently and all the time believes that "the laborer is worthy of his hire." The only question involved is what is the market value of the or his services under prevailing conditions existing on the lakes. We have not the slightest desire to influence in any way the free agency of any class of men, and only wish to see the greatest good to the greatest number eventuating from well considered action.

CANALIZING TO THE COAST.

The redoubtable and "sockless" Jerry Simpson, member of the House of Representatives from Kansas, is preparing a joint resolution he will soon submit to Congress, proposing an international commission between the United States and Canada with a view to their co-operation in a system of extensive canals and waterways closely connecting the great lakes with the Atlantic Ocean. Mr. Simpson, who is familiar with the lakes, having sailed them before the mast in his early days, proposes a chain of short canals which will shorten the route to the seaboard. He proposes a cut from Georgian Bay, on the east shore of Lake Huron, through to Lake Ontario. This cut, he states, could be made by way of Lake Simcoe, and other small lakes, so that the actual canal would not be over 100 miles. It would save 800 miles of the present route through the St. Clair and Detroit rivers, the entire length of Lake Erie and the Welland Canal. It would make almost a bee line from the upper lakes to the St. Lawrence, and thence to the ocean. It is also contemplated that joint action could be taken on improving the upper St. Lawrence in order to open this lake and ocean route to the largest and most modern boats. The proposed cut is the Hurontario project from Georgian Bay to Lake Ontario on Canadian soil, and would have to be done either by Canada alone or by co-operation with this country. Mr. Simpson takes the view that such a canal, even on Canadian soil, would be mainly of advantage to American commerce as most of the shipping of the upper lakes is American. The great grain regions of the far Northwest would thus have a direct water route to the ocean, instead of a circuitous lake route to Buffalo, and transhipped there by rail to the seaboard. The interests of both countries are so involved that Mr. Simpson will now urge a resolution empowering the President to invite Canada to join the United States in selecting a joint commission to consider what can be done and how both countries can co-operate in executing it.

Such a cohesion of interests may possibly meet with favor a few decades hence, or shortly after the annexation of Canada to the United States, or *vice versa* as the Dominion would have it, but we venture to say that no such an arrangement will be entertained by the national legislative bodies under the present or any future conditions of government less than total annexation of one country to the other. Commercial reciprocity or other diplomatic negotiations in the form of military or naval treaties will certainly not be taken aboard, hence, Congressman Simpson's bill is eminently out of tune with the times.

TUBULOUS AND CIRCULAR BOILERS.

The discussions entered into at the annual meeting of the foreign institutions of engineers, naval architects and kindred societies must always contain more or less of interest to Americans engaged on similar lines of study, and the practical development of the highest types of efficiency in structural, mechanical and scientific pursuits. Furthermore, the papers read before these meetings are, to a certain extent, a good index of the trend of modern practice in steam engineering and ship building, and at the same time are a record of the achievements already made in the science, thus fairly indicating the lines on which an upward tendency is considered desirable.

It is of more than ordinary interest at this time to note that at the last annual meeting of the British Institution of Naval Architects a whole session was devoted to the discussion of water tube boilers in marine practice, and even that length of time was found to be too short to allow the members their full swing on the subject. The advocates of the different forms of water tube boilers were numerous and of excellent repute including such men as Thornycroft and Yarrow, whose success with torpedo boats is well known; also representatives of the Belleville, the Babcock & Wilcox and others, while the attack on them, conducted with animation and aggressiveness, was led by Mr. James Howden, whose system of forced draft is now in use on several of our highest classed lake steamers. Mr. Howden singled out the Belleville type, the one adopted by the way, on the new passenger steamers building in Cleveland, as the special subject of his animadversions, and he quoted a long list of figures to prove that the Scotch type boiler when fitted with his system of forced draft distinctly out-rivaled the Belleville in the matter of weight and space occupied for the same amount of indicated horse power. Taking for this purpose the French steamers *Polynisien* and *Armand Behic*, which are each fitted with a battery of twenty Belleville boilers, and are said to have attained on trial 8,000 indicated horse power, while at sea the average working power is 5,000, I. H. P. the respective grate and heating surfaces being 580 and 23,800 square feet, he proceeds to prove that these boilers occupy 82 per cent. more space, and are 19 tons heavier than the cylindrical boilers of the same power, also stating incidentally other minor advantages possessed by the latter such as requiring less constant attention from those in charge, and closing his attack by stating that no firm in the United States has yet had the courage to send a water tube boiler to sea in a commercial steamer. This attacks the tubulous type of boiler with a vengeance, yet Mr. Howden's final argument or any satisfaction that he may have derived therefrom is destined to be short-lived, for in a few weeks the Cleveland built Northern Line Steamer "Northwest" will have gained all the experience necessary to demonstrate the Belleville boiler, which being satisfactorily done, the example thus set will no doubt soon be followed on the seaboard, and we may here remark with just gratification that this will not be the first instance in which they have followed our footsteps, e—g—the whalebacks and their prototypes the "Turret" ship.

Notwithstanding the old-time faith in cylindrical boilers borne out by present reliable and efficient service, there is no doubt that the water tube boiler possesses many advantages, though hitherto adopted on tonnage limited as to size and work, its day is evidently advancing whether in its present form or in certain changes and modifications the tubulous type of boiler has come to stay. In the water tube type there is a certain immunity from the liability to serious accidents such as an explosion, furthermore it is now in a more practicable, commercial form than ever before, and while it should be candidly admitted that there is still much in it to be improved upon when destined for high class permanent service in heavy tonnage engaged in the over-sea trade, the type stands to-day as a most formidable rival to the circular boiler, although the improvements constantly going on in the latter, such as forced draft, *Serve's* tubes corrugated furnaces and other important features as well as in the construction as in the working of them, will no doubt enable them to hold their present supremacy for some time yet to come, and to those who have considerable capital invested in the circular boiler this may be a present satisfaction.

One point of great commercial interest which we fail to see properly treated in all the papers read before these societies is the financial question of comparative first cost and cost of up keep, this consideration is of equal importance with efficiency and construction from a vessel owner's point of view, and when properly placed before intending purchasers would materially increase the value and application of arguments advanced by inventors and manufacturers when lauding their special departures from preconceived forms of mechanism. In a word, economy must be a ruling factor in all cases of change, otherwise questionable efficiency only is credited.

MUTUAL MARINE INSURANCE.

Now that Inland Lloyds have seen fit to discard all vessels formerly classed B 2 and all tugs except those engaged in the wrecking business, it would be in order for owners of the discarded property to get together and form a mutual insurance club or association for protection and indemnity against all losses. Such organizations outside of the usual or standard classification societies are numerous in England and usually maintain an excellent reputation for fair dealing all-round. Besides being covered in the ordinary form of policy, owners of A 1 tonnage not unfrequently join an indemnity association for the enforcement of all proper claims for freight and demurrage, also for contesting claims for breaches of contracts of affreightment, and in the smaller class of clubs and tonnage for even the loss of a flying jib, so that the lack of rating in any register does not effectually bar out the owners of discarded tonnage from indemnification for losses.

In suggesting a new departure for the owners of this at present neglected tonnage we may say that the subjects of marine insurance and of Lloyd's classification are so intimately connected that their close relationship is some excuse for those who consider them identical, and for others who even go further and elevate classification to an importance to which it is not entitled.

In the question of mutual insurance for the class of tonnage here dealt with, it requires but little argument to show that a system of insurance being once established classification framed on any particular basis would follow, thus making insurance precede classification, and as an adjunct of the latter, though any attempt to frame a satisfactory system of rules and grades for vessels without they are based to some extent on the assurers requirements would of course never succeed; at the same time, vessels may be classed to suit the rules of any association. It should be conceded that the system of insurance is the first thing to be put on a sound basis, and the tonnage being well known, as it is on the lakes, classification would then adjust itself in an equitable manner to all concerned. This system would eventually grow into a society formed to take care of the interests of the tonnage discarded by Inland Lloyds and might ultimately rival in economical results for a season's indemnification against losses, the tonnage carried by the parent association.

This reasoning carried a step further for the gratification of owners of tugs and the lately classed B 2 hulls, though applicable to superior tonnage, might be illustrated as follows: Why class in the English Lloyd's register solely to suit English underwriters? Or in the French, German or Austrian Lloyds to suit the respective underwriters of those countries and get nothing in return. Such a proceeding would certainly not commend itself to any intellectual vessel owner.

On further investigation of this subject it might be found advisable to establish a class exclusively for tugs, and if so there should be little difficulty in the way of the managers from each port getting together and formulating a system whereby the assurer and the assured might be identified in their own club, and indemnification against special losses be made on a mutual assessment plan.

On the lines of economy in the handling of steamboat property we now find that since the reduction in fueling charges vessel owners have also succeeded in reducing ore trimming rates. Although the actual contracts for one or two ports has not yet been closed the deal is sufficiently advanced to state that trimming charges at Marquette will be reduced from 3½ to 2½ cents per ton this season. The Duluth rate which however is an easier ore to handle, will come down from 3½ to 2 cents, this would probably place the trimming rates at Two Harbors and Ashland at 2½ cents. Ore discharging figures have also been revised for Lake Erie ports. There is also to be a reduction in grain trimming rates at Buffalo. It is to be deplored that such cutting and slashing of wages, especially where practical skill and manual labor is concerned, should have been found necessary to keep transportation moving at all, but even with the figures as they now stand individual members of the Lake Carriers' Association express themselves as being anything but eager to open the season, and in fact some of the principal lines are still undecided about even fitting out, while others feel that in the event of the slightest hitch occurring in freights, unlooked for detention in port, minor casualties afloat or any dissatisfaction relative to wages they would issue orders to keep a portion if not all of their tonnage tied up to the docks rather than attempt the worry of work which promises so little returns even under the most favorable conditions. The coming season and its prospects is not filled with unalloyed pleasures for the vessel owner to contemplate, tonnage of the biggest kind afloat, equipped with labor saving devices and every economical feature known to the trade, may, if it goes along without undue detention pay its bills without asking

for an extension of time to do so. Line boats and those owned by mining companies will also keep on at a steady gait. But general tonnage has "a hard row to hoe" more marked perhaps because the indications are such that even an old coin can't be changed for a new one in the handling of coal owing to the declared strike of miners.

THE loss of \$100,000 on the two grain cargoes and hulls last week will make quite a hole in the premiums paid to underwriters for the current month. Since the issue of the tariffs for the present season the underwriters have been severely criticised for raising the rates on the class of boats known as A2. As both the Barnum and Minneapolis belonged to this class, it will now tend to lessen the present and future criticism. Evidently the general agents were not well enough informed or else they were too keen after the premiums when underwriting the Barnum's risks. Had the vessel been properly classed and rated in the Inland Lloyds for 1894 it would not have prevented her foundering through ice damage, but was it not a trifle loose to place money on a presently uncertified bottom. By the way, the Barnum must have deteriorated in an awful rapid manner considering that last year she held the first letter. A2 ought not to be so bad a rating, or is it? Well! a new classification held her for this season on that class at a valuation of \$42,000, although the manager of Inland Lloyds would not even give her a permit to change ports without repairs being effected, and now it is announced that insurances were placed on the strength of the rating given in the new American Lloyds. However, the boat is all right; everyone knows where she is, and the assured will gladly accept indemnification at the hands of the assurer, but it goes to prove that classification registers these days should mean what they say, or say nothing, if surveys and ratings are not to be made a burlesque of.

WILLING or unwilling, the vessel owner may "hold his horses" or his fleetest "wave churners" tied up loose to the dock for a while longer. He simply can't give employment to his faithful and well-tried employees or change the currency he is now possessed of from one pocket to the other without diminishing the already diminished volume of same. The impending coal strike is a saving and binding clause on his competitors better than a first of May contract, made only to be broken like the pie-crust moral. Chartering is practically suspended, and cargoes, not to mention freights, are unheard of. The only contention now before the owner is where to find a handy spot to tie up the boats that were engaged for winter storage and the spring delivery trip.

INLAND LLOYDS REGISTER.

The Inland Lloyds Register, just issued for 1894 is a smaller book by thirty-eight pages than the volume which was got out last year. On glancing through the pages this is accounted for on finding that all vessels under one hundred tons are excluded from its pages, also all tugs except those equipped and engaged for wrecking purposes. We also note that the second letter is cut down from three to two classes and now reads B. 1 and B. 1+, the latter classification excluding perishable cargoes and for coarse freight only.

In this year's lake classification register of shipping there are several large steamers omitted, presumably on account of the surveyors being unable to inspect the craft, owing in some cases to their holding cargoes during the winter, and probably in the first supplement issued by the Inland Lloyds manager, Capt. D. McLeod, such steamers as the Centurion, W. H. Gilbert, George Gould, the new Northern Line passenger boats, and others will be given the high classed rating to which they are entitled. The column of valuations seems to have undergone a general reduction of about \$25,000 on steel steamers, and an average reduction of \$10,000 in valuation on all A 2 wooden bottoms. Steel steamers rated last season at \$252,000 are now valued at \$200,000; schooners from \$25,000 to \$18,000; from \$22,000 to \$15,000; from \$9,000 to \$7,000, and from \$50,000 to \$40,000. The total valuations last season were about \$55,000,000. This year they come nearer the census figures and are about \$46,000,000.

In other respects the register has been published in its usual form and credit is due manager McLeod for the careful compilation and neat typographical appearance of the work.

LIQUID FUEL ON TUGS.

The Chicago smoke inspector is advocating the use of petroleum as fuel on the river tug boats, and thus do away with smoke, which it is granted is a great nuisance at the bridges. The proposition however is not regarded favorably by tug owners. Capt. J. S. Dunham, one of the most experienced tug owners does not think liquid fuel is practicable, principally on account of the limited room in the hold of a tug. In so small a boat, he says the distribution of weight is an important feature, and the only place to stow fuel is where the

coal bunkers are now, alongside the boiler on both sides. That would bring the tanks in close proximity with the surface of the boiler, and there would be danger of an explosion. When petroleum has been used on shore the storage tanks are required by the insurance companies to be at least thirty feet from the furnaces. On a tug this is impossible. Then petroleum is the worst stuff to carry in tanks there is. It will almost soak through iron, and this brings forward a decided objection. There is bound to be more or less leakage, and the escaping oil will run down into the bottom of the hold and there soak into the wood. It would require very little oil to thoroughly saturate the planks and make them highly inflammable. As this would be right at the fire hold, sooner or later the boat would catch fire and be badly burned if not totally destroyed. The insurance companies have refused to take fire risks where the storage tanks are in such close proximity with the furnaces and boilers. As a fuel, however, I have no doubt that petroleum could be adapted to the use of tugs, as the combustion is so rapid and can be regulated so readily. Judging from experience in the past, I do not think it will be an unqualified success on tugs."

THE APPARENT AND TRUE DIRECTION AND VELOCITY OF THE WIND.

The observers for the U. S. Hydrographic Office, as a rule, report the direction and velocity of the wind correctly, and they are familiar with the fact that there is sometimes a great difference between the apparent direction and velocity, as indicated by the vanes, flag or pennant on board ship and the true direction and velocity with which the wind is blowing. Practical seamen determine the true direction and force of the wind from indications outside of the ship, such as the waves, etc. To more clearly explain this feature to seamen the Hydrographer has issued with the North Atlantic Pilot chart the accompanying diagram and explanation thereof:

When steaming 10 to 20 miles an hour the true and apparent directions and velocities of the wind may differ considerably. For instance, there will apparently be a calm on board a steamer going 20 miles an hour when the wind is really blowing with a force of 20 miles from right aft, and on the other hand the wind will blow with an apparent force of 40 miles an hour from dead ahead on board a steamer going 20 miles an hour, when its true force is only 20 miles from dead ahead. When the apparent direction of the wind is at an angle with the vessel's course the true direction and velocity can be determined from that angle and the velocity of the wind and the speed of the vessel. This may be demonstrated by the parallelogram of forces as in the diagram.

In the diagram let A B represent the course and speed of a vessel in miles per hour and CA the apparent direction and velocity of the wind in miles per hour, as shown by a vane on board the vessel; then connecting B and C and completing the parallelogram A B C D, the line D A will represent the true or actual direction of the wind and its velocity in miles per hour. Suppose a vessel steaming along A B, or west, 20 miles an hour, having the wind apparently along C A, or from the northwest, 23 miles an hour, then the line D A must have the direction of about one point abaft the beam, its proportional length must be 16.5 miles. Therefore the true direction of the wind in this case is about north by east and its true velocity 16.5 miles per hour.

NOT SUITED FOR NAVAL PURPOSES.

A Washington dispatch states that the naval board appointed to investigate the feasibility of converting the whaleback type of vessel into auxiliary war cruisers has reported that these vessels do not represent features which would make them useful as commerce destroyers or fighting ships, on account of the impossibility of mounting them with heavy ordnance. The board was designated by the secretary several weeks ago to report upon the proposition of The American Steel Barge Co., who believed it possible to make formidable coast defense ships out of whalebacks by mounting them with heavy, high-powered guns. Little free board, which makes them in a measure like monitors, was also in their favor. Experience with weights and calculations shows that any of the vessels would stand on their stems with a heavy gun placed forward.

It would not be possible, further, to install heavy ordnance on any part of the ship owing to their light construction and little deck space. Only the lightest rapid fire and machine guns could be used at all, and for this reason the board recommended that the whalebacks should not be counted upon for auxiliary cruisers in time of war.

THROUGH FREIGHT RATES.

The Northern Steamship Co. has announced its freight rates for the season of 1894. The rates from Cleveland and Detroit to Duluth and West Superior are as follows: First class, 50c; second class, 40c; third class, 30c; fourth class, 23c; fifth class, 20c; sixth class, 18c. The rates to Minneapolis and St. Paul are as follows: First class, 75c; second class, 65c; third class, 45c; fourth class, 30c; fifth class, 25c; sixth class, 22c.

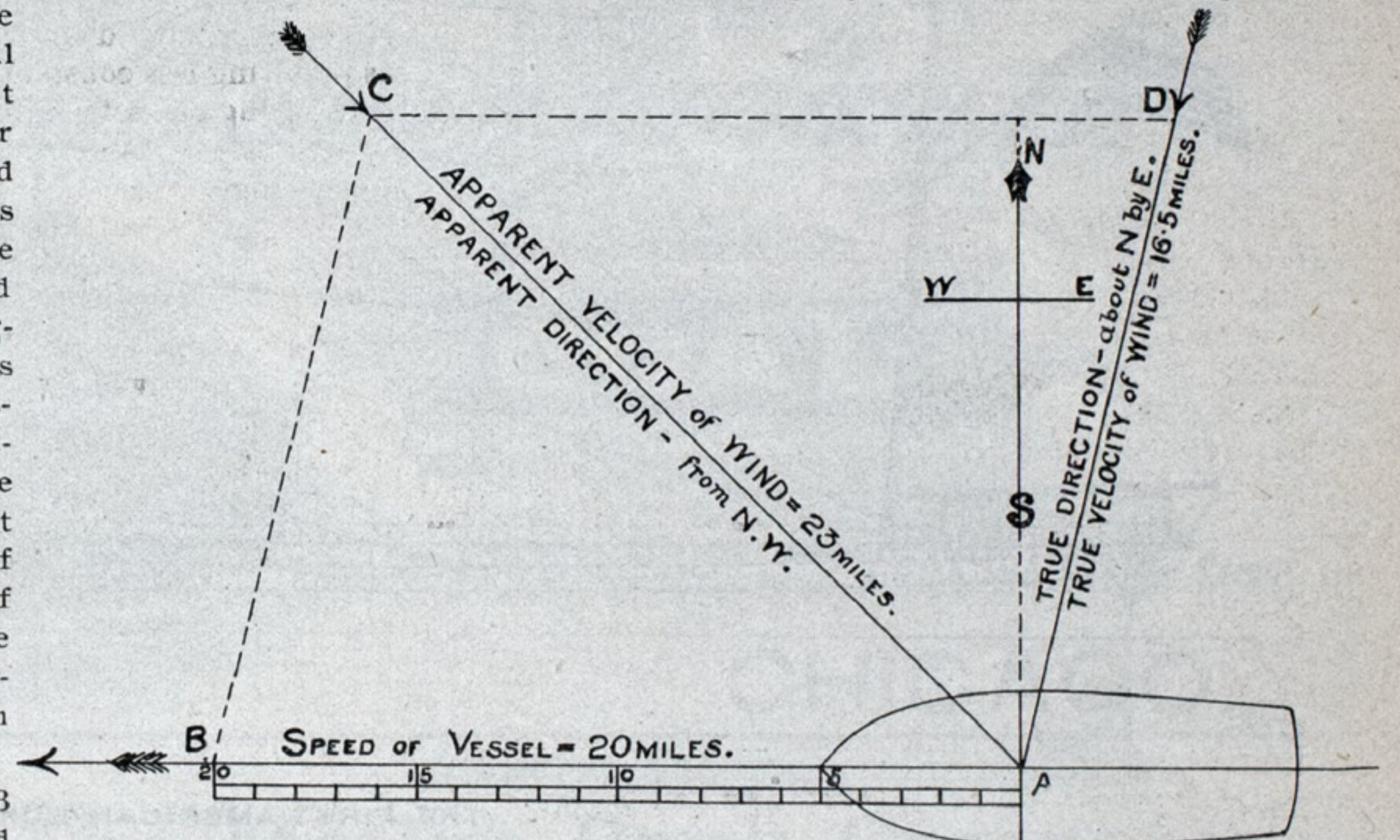
THE MERRITT-MESABA CASE.

The hearing of the case of Merritt vs. The American Steel Barge Co., was adjourned to Thursday in the New York Supreme Court chambers. It involves 11,000 shares of the Consolidated Iron Mine Co., worth \$100 per share. Mr. Merritt in transactions with C. W. Wetmore, of New York, gave him a note for which he gave the stock as security. The note was not paid and was transferred by Wetmore to the American Steel Barge Co. The American Steel Barge Co. offered the stock for sale and Mr. Merritt has prayed an injunction restraining the sale, claiming that he owned the stock.

TRANSFERS OF VESSEL PROPERTY.

The following transfers of vessel property have been recorded at the Milwaukee customs office:

Schooner La Petite—Theodore Plathner to William Glockner, of Milwaukee, one-third, \$800. Same vessel—Herman Oertling, Jr., to Theodore Plathner, of Milwaukee, two-thirds, \$1. Same vessel—Theodore Plathner to William Glockner, one-sixth, \$400. Schooner Starke—Theodore Plathner to Herman Oertling, Jr., one-third, \$1. Steamer William Rudolph—Theodore Plathner to Henry Bennett, of Milwaukee, and the Cameron Lumber Company, of Torch Lake, Mich., the whole \$9,000. Tug Myrtle Camp—P. A. Camp, of Mani-



towoc, to Charles Zeiser, of Green Bay, the whole, \$1,300. Schooner Minnie—Charles Zeiser to L. J. and Ben Debaker, of Green Bay, the whole, \$450. Schooner Ida—George D. Gardner, of Decorah, Ia., to Anton, Christ and Andrew Christensen, five-eighths, \$2,750.

CASUALTIES OF THE WEEK.

The schooner Lottie Cooper with lumber from Pine Lake to Sheboygan, Wis., was wrecked off the latter port on Monday morning. Ed Olson, a sailor, was washed off the wreck and drowned. The captain and the three other men were rescued by the life saving crew. Both schooner and cargo are a total loss.

The propeller Dan Kunz, of Sandusky, O., while endeavoring to make a short cut across Sandusky Bay from Marblehead to Sandusky during a heavy blow Wednesday afternoon foundered and filled. It is expected that she will be a total loss with her cargo of stone.

The schooner Island City bound from Ludington to Milwaukee, foundered in mid-lake Sunday night. Capt. William R. Wood was the sole survivor. The lost were: William Marsch, of St. Joseph, Mich., aged 21; Joseph Rouse, of Baroda, Mich., aged 18. Both men were unmarried. Capt. Wood was washed overboard by a huge wave when the schooner was lying on her beam ends and caught the yawl, which had been washed away. He was without oars, and drifted ashore nearly dead.

THE steamer Nyack will run between Milwaukee and Muskegon this season. She will make four trips a week

LITERARY NOTES.

The annual report of the Department of Railways and Canals of the Dominion of Canada for the fiscal year ended June 30, 1893, issued at Ottawa, March 1894, is fully equal to former reports and is a most important departmental volume to those interested in transportation statistics. Hon. John Haggart is the minister of Railways and Canals.

The annual report of the Buffalo Merchant's Exchange, including statistics of the trade and commerce of the port for the past year, exceeds in its detail of transportation facts, former reports, that is, if one annual report compiled by Secretary William Thurston can surpass another. The issue for 1894 is an epitome of the commercial importance of Buffalo and the deliberations of the business men listed in the membership of its influential Merchant's Exchange is a certain premonition of a greater Buffalo.

Mr. Joseph L. Brent, vaporizes in the April *Atlantic Monthly*, over the possibility of a naval war on the Great Lakes. Mr. Brent's suggestive but nonsensical paper is entitled "War's Use of the Engines of Peace." Following is an extract from the article: "When the vast extent of our coast line, fronting upon the ocean, the gulf and the Great Lakes, is considered, the task of defending by permanent works only points of the first importance is almost too heavy to be borne, while even this cannot be accomplished in half a century; and should stimulate our studies to find something to be immediately available, and which, if shown by experiment

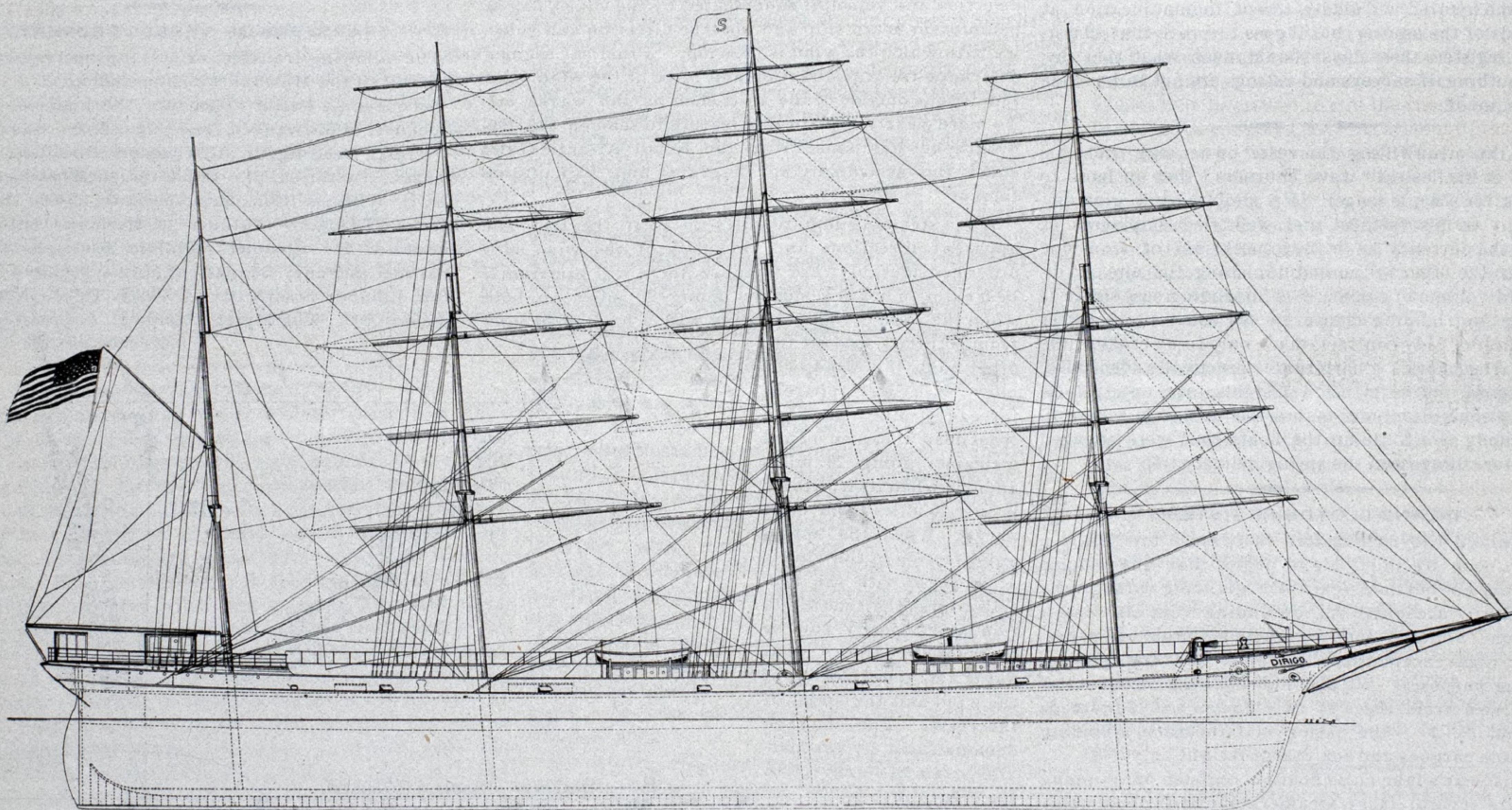
even life from the development of shipping are simply astounding in their number and greatness. The same thing would follow here upon an increase of our shipping holdings. It may seem singular, and almost improbable to many people, but there is no other industry that develops and supports such a multitudinous amount of trades as that of shipping. It is not only in number or quality therefore, but also in the support and incentive that it gives to many trades that the development of our shipping trade must be considered.

The Corinth ship canal, according to a late report made to the Austrian Lloyds, is not yet in first-class order for traffic. At certain points in the canal the danger from landslides is still present, notwithstanding the masonry put in at these weak places. At the west end of the canal, 23 feet is the maximum permissible draft for ships entering. No lights are provided and night passage through the canal should be avoided except in a clear night and with no wind blowing. The canal company has provided no means for rendering assistance to ships aground. The report goes on to say that while there should be no special difficulty in making the passage from April to November, it should be made in the day time.

STEEL SAILING SHIP DIRIGO.

ILLUSTRATED.

The steel sailing ship Dirigo, now loading 120,000 cases of refined petroleum at Philadelphia for Japan, is the first steel sailing ship built in the United States,



THE FIRST AMERICAN-BUILT STEEL SAILING SHIP.

to be effective and reliable, may afford security, and besides work enormous economy in money and time. Our Great Lake cities are absolutely at the mercy of any of the 80 gunboats, drawing less than 10 or 12 feet of water, that England can introduce into the lakes through the Canadian canals, and our government ought to find some speedy and effective method of protecting this defenceless wealth and population." This canal scare has been done to death until there is not a possibility of the slightest notice being taken of it by any one acquainted with the geographical situation on the lakes. The days and tactics of Commodore Perry are quite a century behind the age and nothing at this date could come out of the canals to hurt lake cities or commerce.

MARITIME MISCELLANY.

In addition to the "turret-deck" vessels now under construction at Sunderland it is stated that at least six more vessels of this type are "booked" four of them to be about 350 ft. long and built to order of a London firm of shipowners. The vessels which bear a resemblance to the whalebacks, will all be built to the requirements, and under the special survey of the British Corporation for the Survey and Registry of Shipping, and will have their free-boards assigned by that body.

The New York *Maritime Register* asks if it has ever occurred to those who give scant attention to our merchant navy how many industries are interested in its growth. When we turn to the maritime service of other countries, that of Great Britain for instance the trade ramifications that are seen to draw profit and

and, while there is not a full rigged ship on the lakes there are many of our readers who will feel an interest in viewing a cut of the new steel vessel.

We are indebted to the *American Shipbuilder*, New York, for the plate and descriptive matter of the Dirigo, whose general dimensions are 312 feet in length, 45 feet beam and 25 feet deep, net and gross tonnage respectively 2,856 and 3,005.

The name of the vessel, Dirigo, is the motto of the state of Maine, meaning, "I direct." She was launched February 10, and is commanded by Capt. George W. Goodwin, who has for the past eighteen years been in command of the ship Sterling, built by this company in 1873, and who we understand was mate of a ship at the age of 19, he having doubled Cape Horn no less than 33 times during his eventful career. The Dirigo is the 95th vessel built by the firm of Arthur Sewall & Co., of Bath. She will spread about 12,500 yards of canvas and be manned by 38 hands all told, enumerated as follows: Master, 3 mates, 2 boatswains, carpenter, donkey-man, 24 A. B.'s 4 boys, cook and steward. Her anchors are 6,300 pounds each and an estimate of her total cost is placed at \$150,000.

THEN AND NOW.

Supt. Kirby, of the Wyandotte yards of the Detroit Dry Dock Co., remarked recently that the cost of constructing a steel boat today would surprise the builders of twenty years ago. "When we built the E. B. Ward in 1871, plate iron at the cheapest rate cost 6½ cents. Now we can procure first-class steel for 18-10 cents. Good

fitters were paid by the day \$3.50, while at present \$2.50 is the scale of wages. It cost about \$80,000 to build the ill-fated Ward which was lost somewhere on the Gulf of Mexico. Now \$50,000 would build the boat."

TRADE NOTES.

The Cleveland Twist Drill Co., of Cleveland, O., is to furnish the U. S. Cruiser Columbia with a full complement of twist drills and tools.

The Roberts Safety Water Tube Boiler Co., of Red Bank, N. J., and 18 Cortlandt street, New York, are building a Roberts boiler nine feet square and with 56 square feet of grate surface for the quarantine steamer State of New York.

The Gas Engine and Power Co., New York, is building a steam yacht for Cord Myer, of the New York Yacht club, to be 83 feet long, 76 feet on water line, 13½ feet beam, 7 feet deep and 5 feet draught.

Warren Webster & Co., of Camden, N. J., manufacturers of Vacuum feed water heaters and purifiers and oil and steam separators report that the number of orders they received for the above named specialties, during the month of March, was very satisfactory and showed a marked improvement over the few former months. They say that the reason their specialties sell during these times is on account of their goods being fuel saving devices. Rapid progress is being made upon the new extension of their wrought iron department, connected with the new works.

EVERYBODY in this part of the country knows that the city of Buffalo is growing rapidly, and that, in hitching up the tremendous power of Niagara Falls, it is bound to go ahead at a greater rate from now on than ever before. Some interesting facts on the subject are con-

tained in the *Illustrated Buffalo Express* of April 1st, the issue being a magnificent double number—30 pages. The great Niagara tunnel, now complete, has cost \$3,000,000. It provides for the utilization of 120,000 horse power. A strong corporation has been formed to transmit power to Buffalo by electricity. Routes are now being obtained and there will be a public opening of the central power station early in June. Some of the data of Buffalo's development are amazing, but nothing tells the story better than the increase in the circulation of the *Illustrated Buffalo Express*. In the last five years that popular paper has gained in circulation and business 150 per cent.

A BOILER COMPOUND.

The Parsons & Pattison Chemical Co. manufacture an alkali boiler compound which appears to be fast gaining ground among stationary and marine engineers. The following opinion from a practical man is sent us as an endorsement of the compound and explains itself:

CHICAGO, ILL., January 15, 1894.

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Yours very truly,
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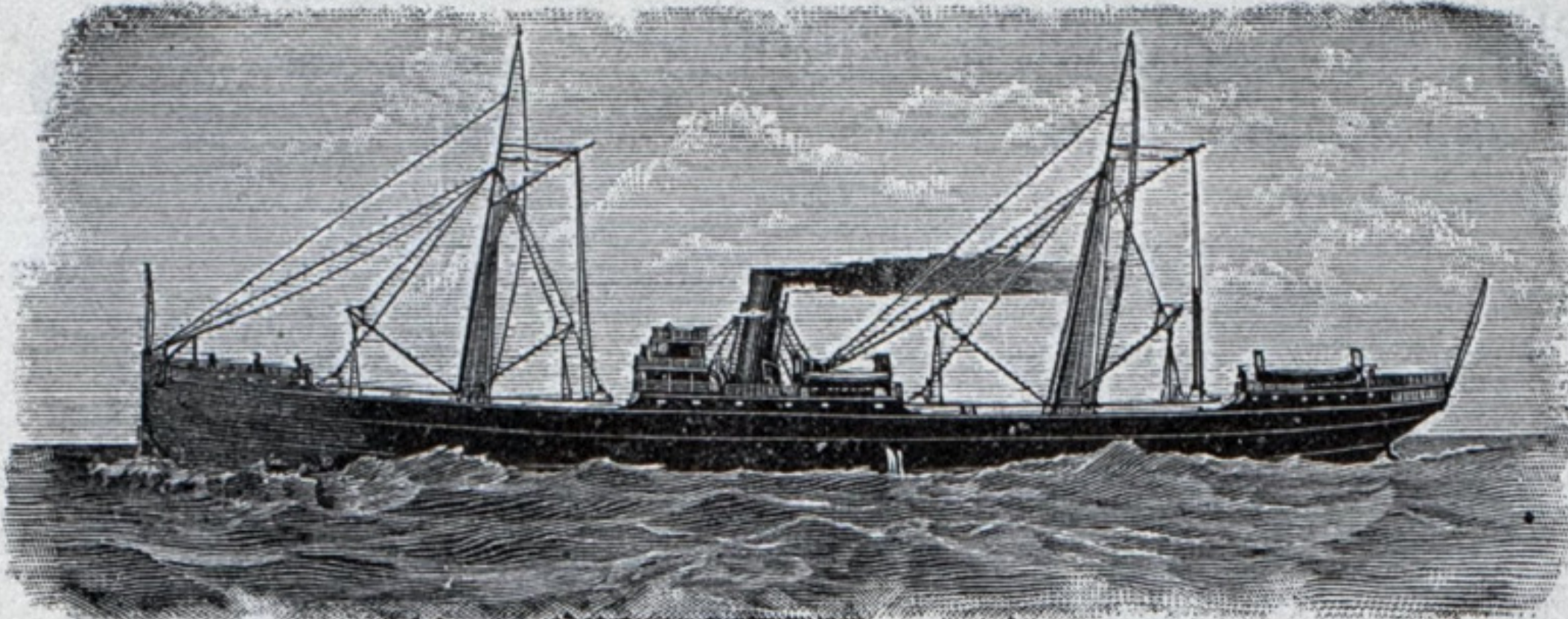
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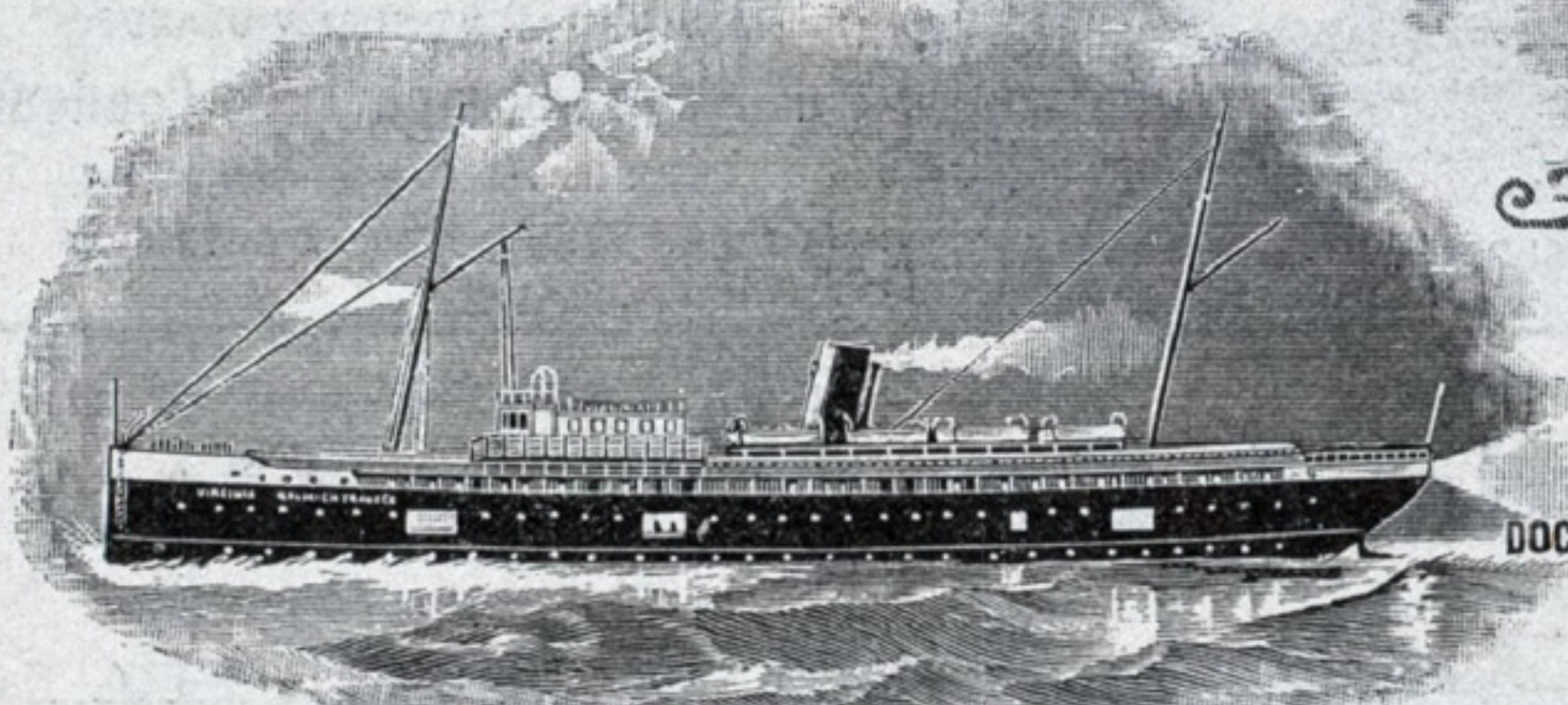
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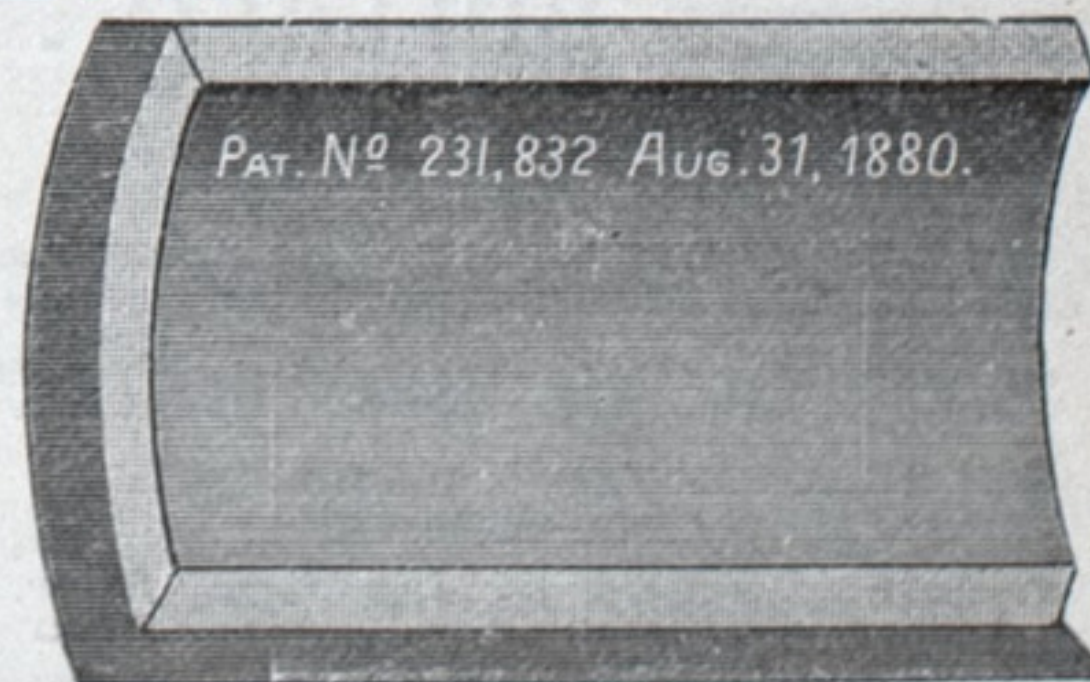
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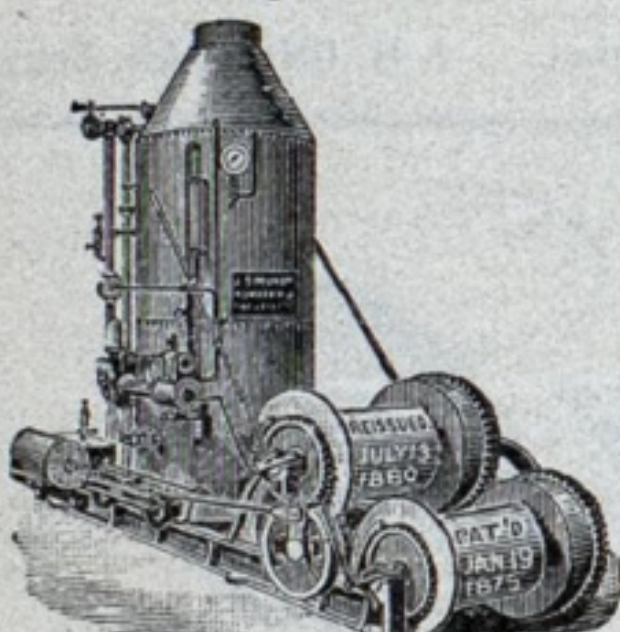
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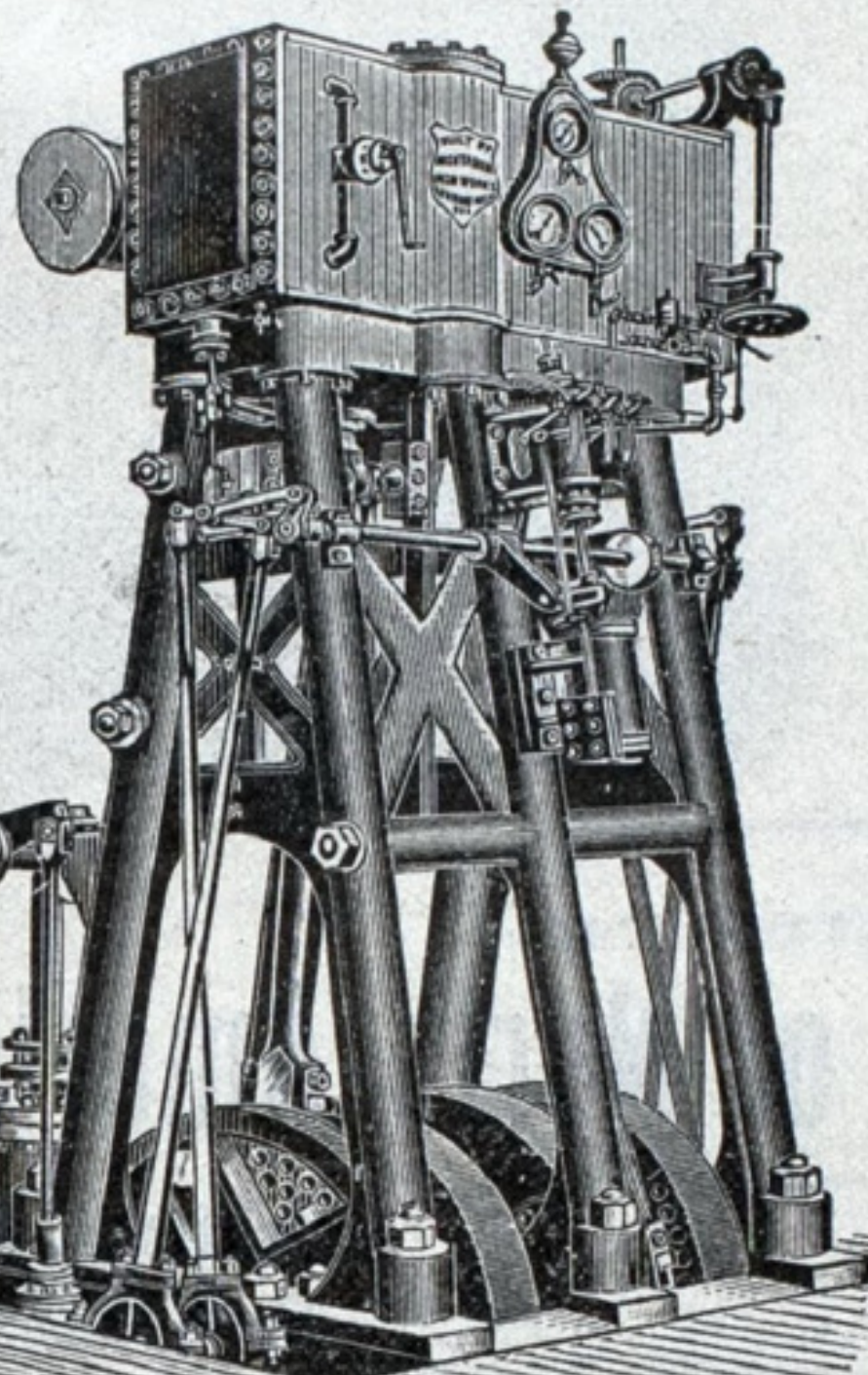
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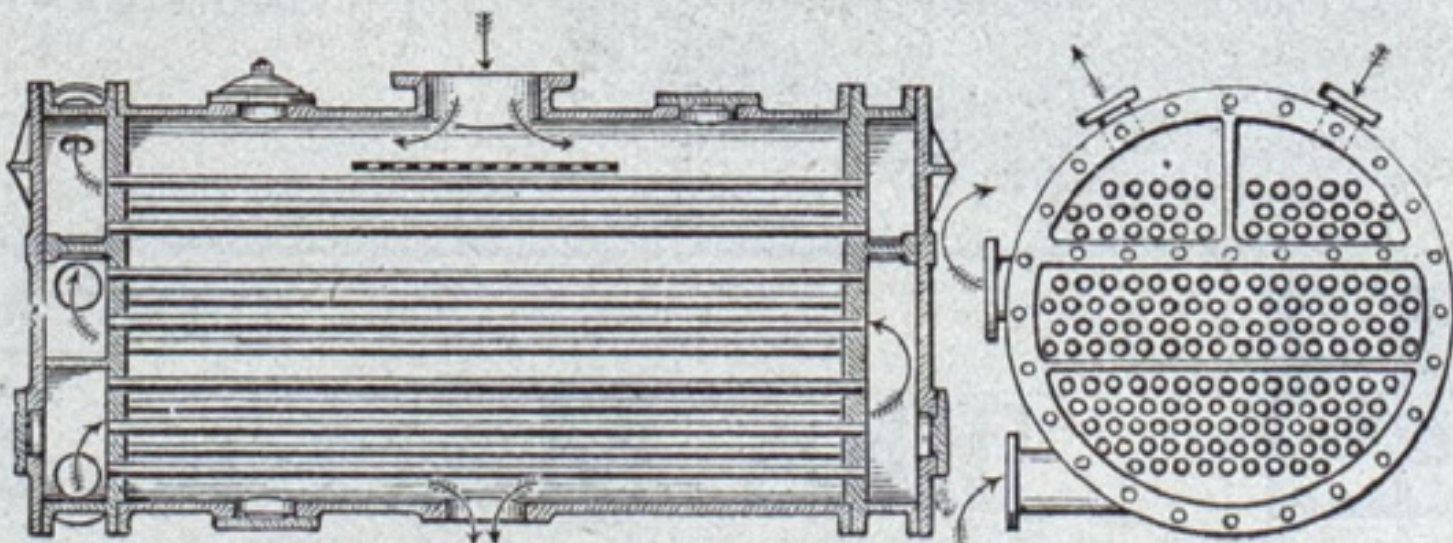
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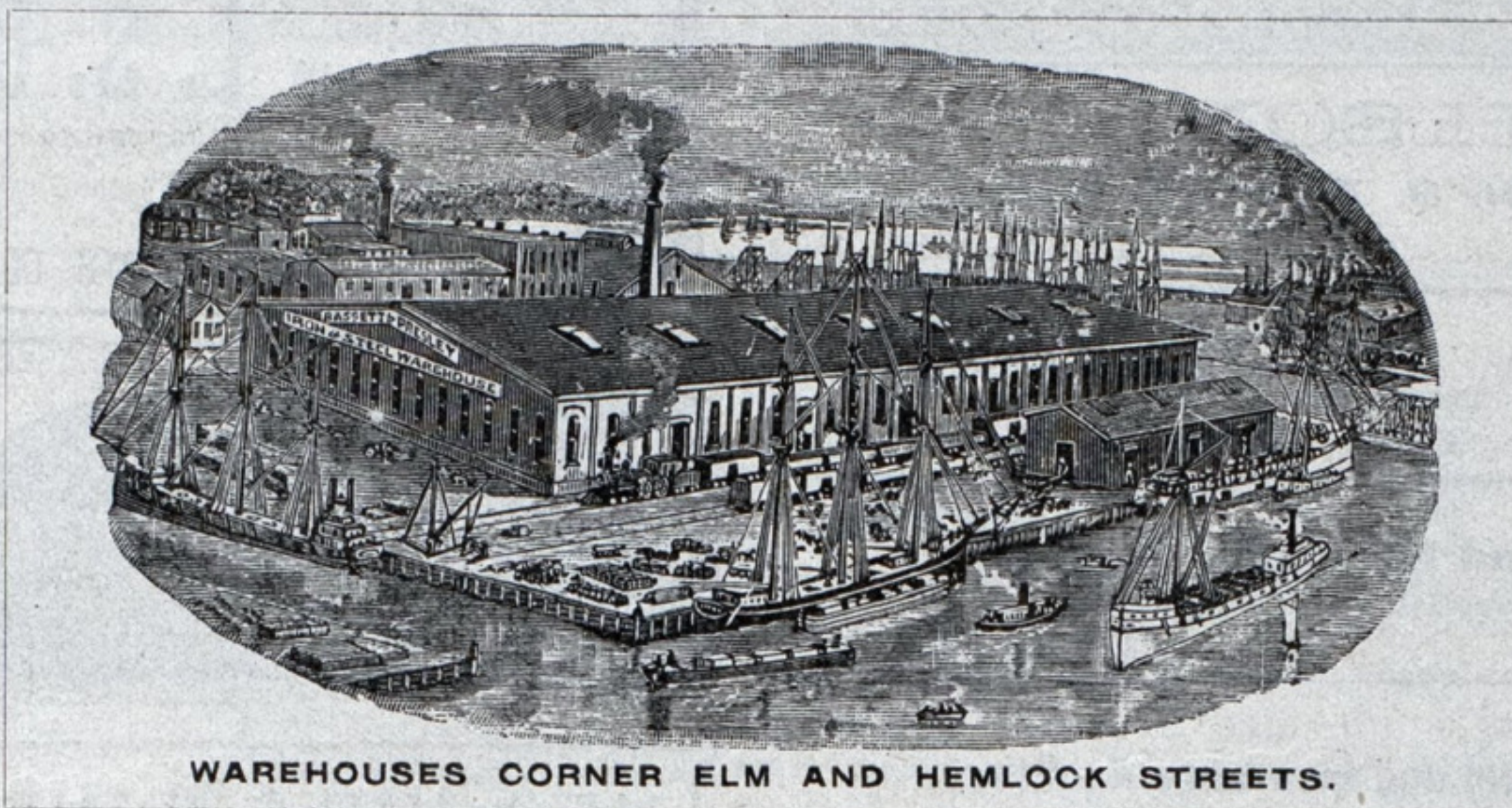
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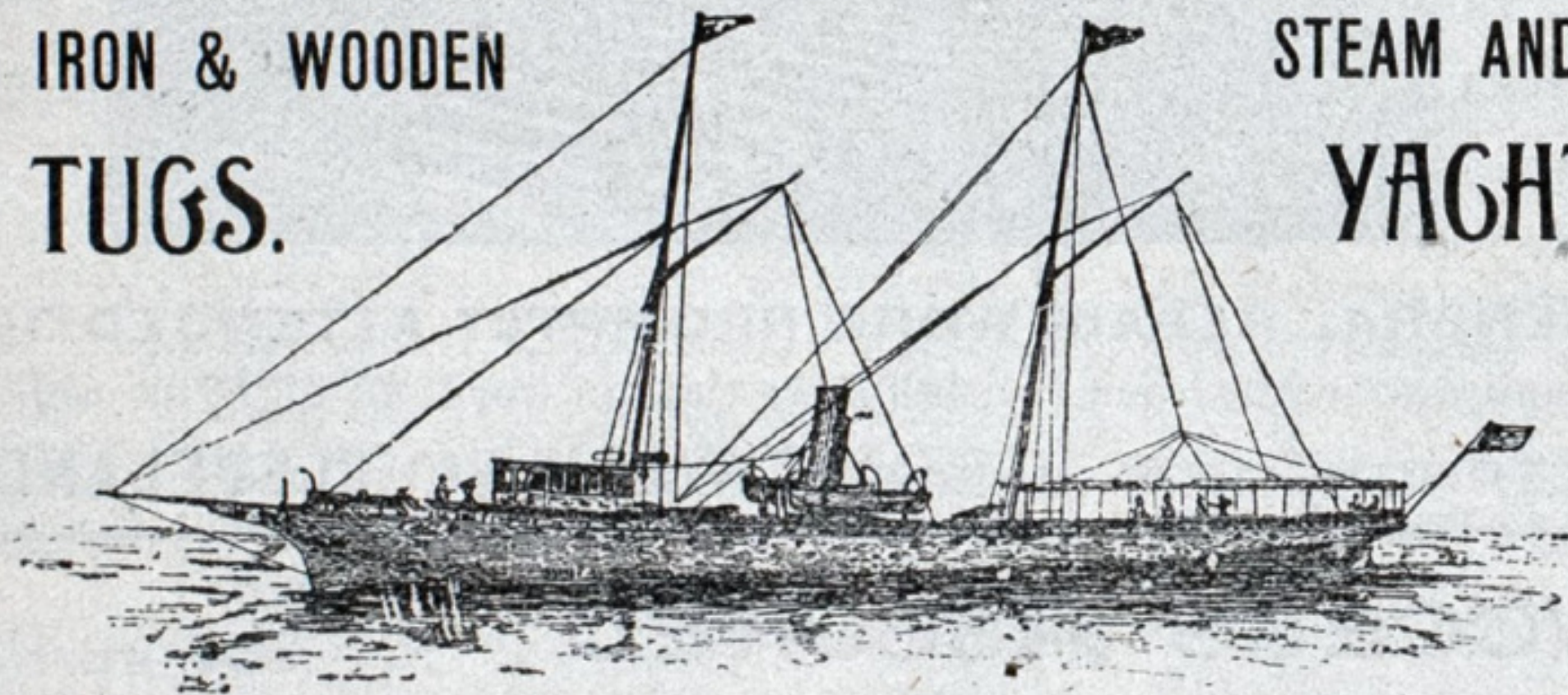
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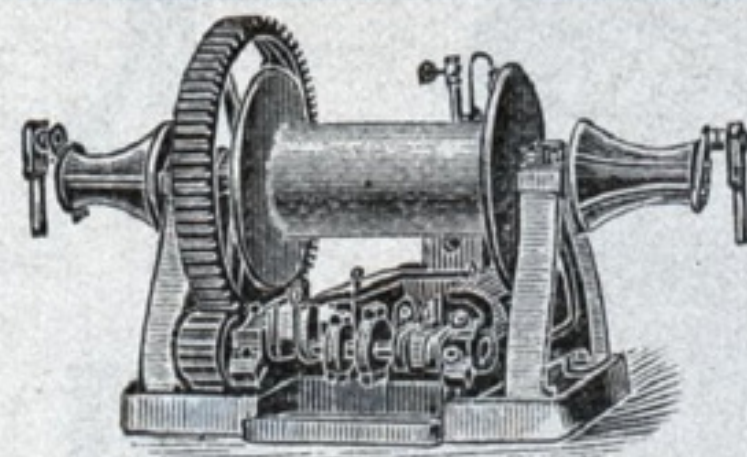
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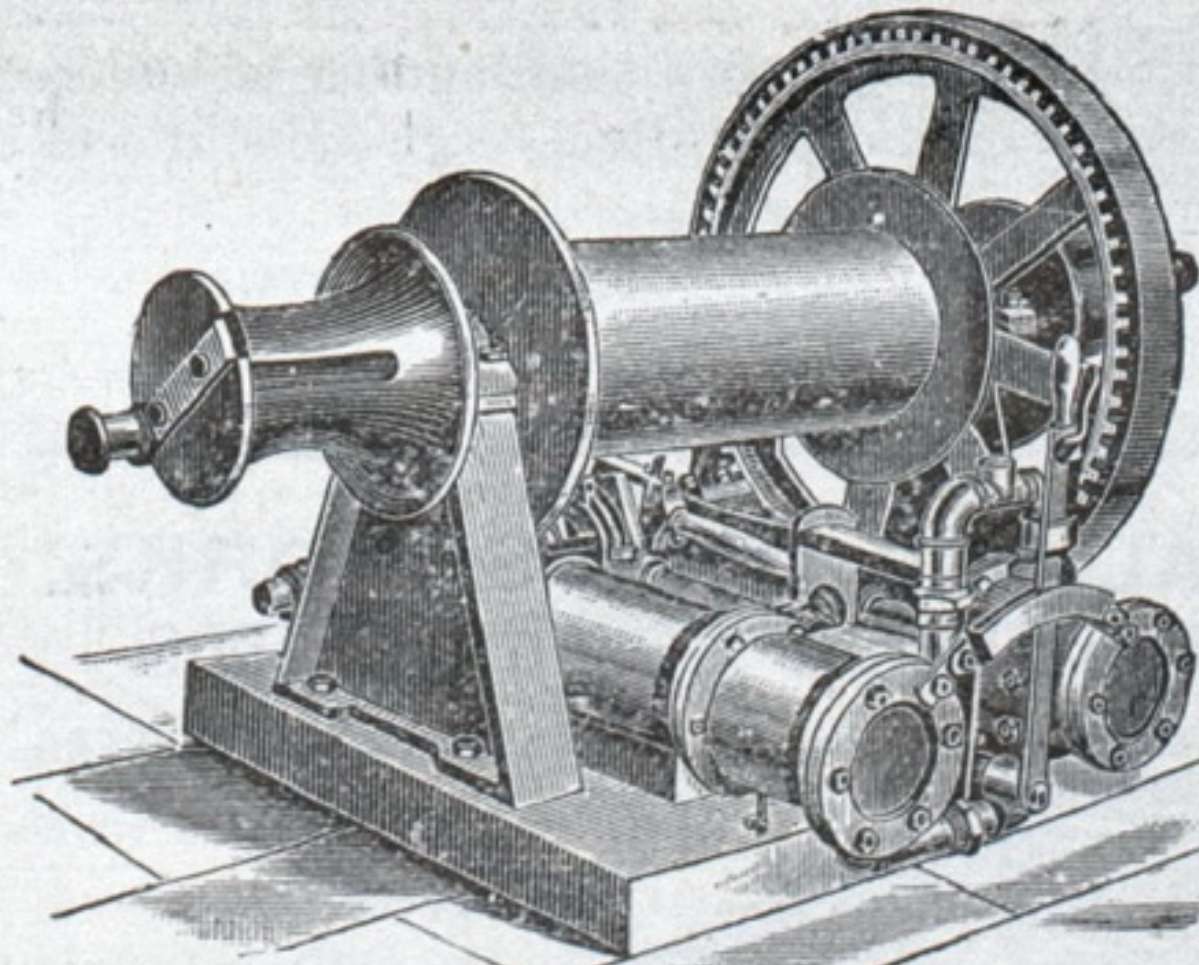
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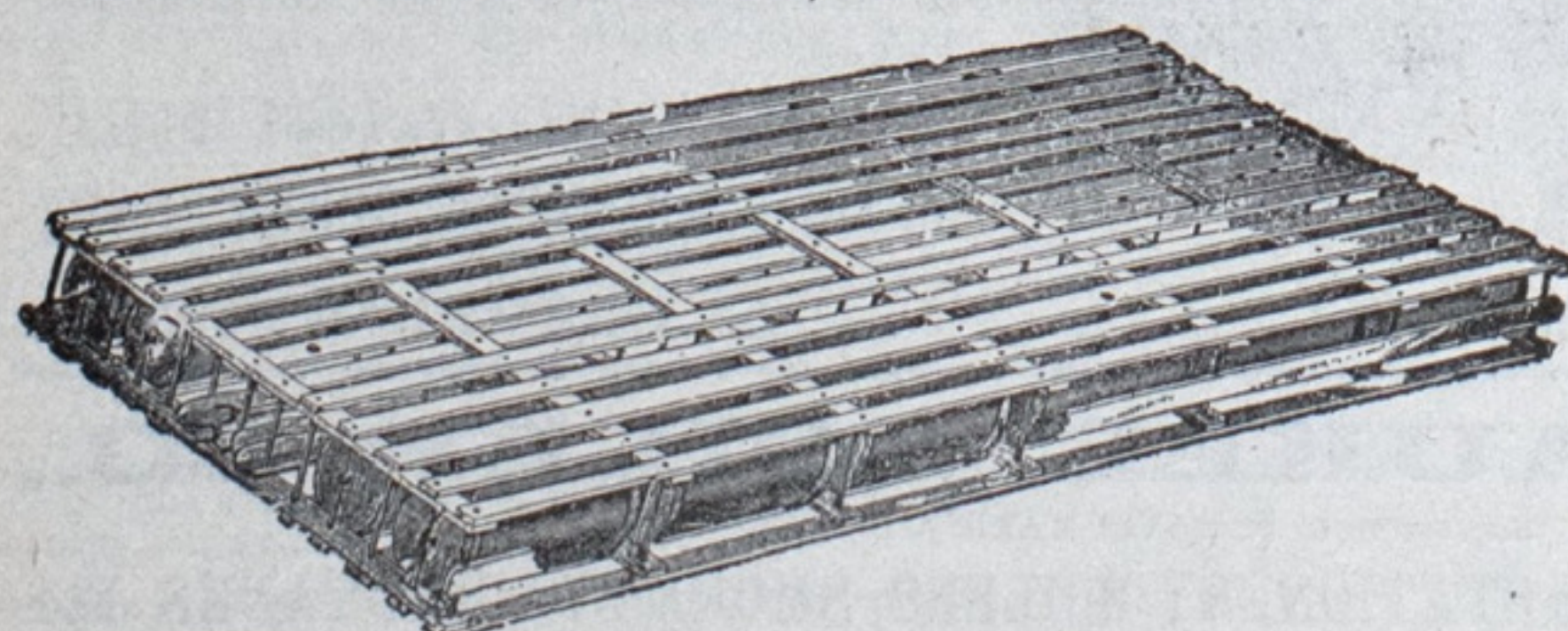
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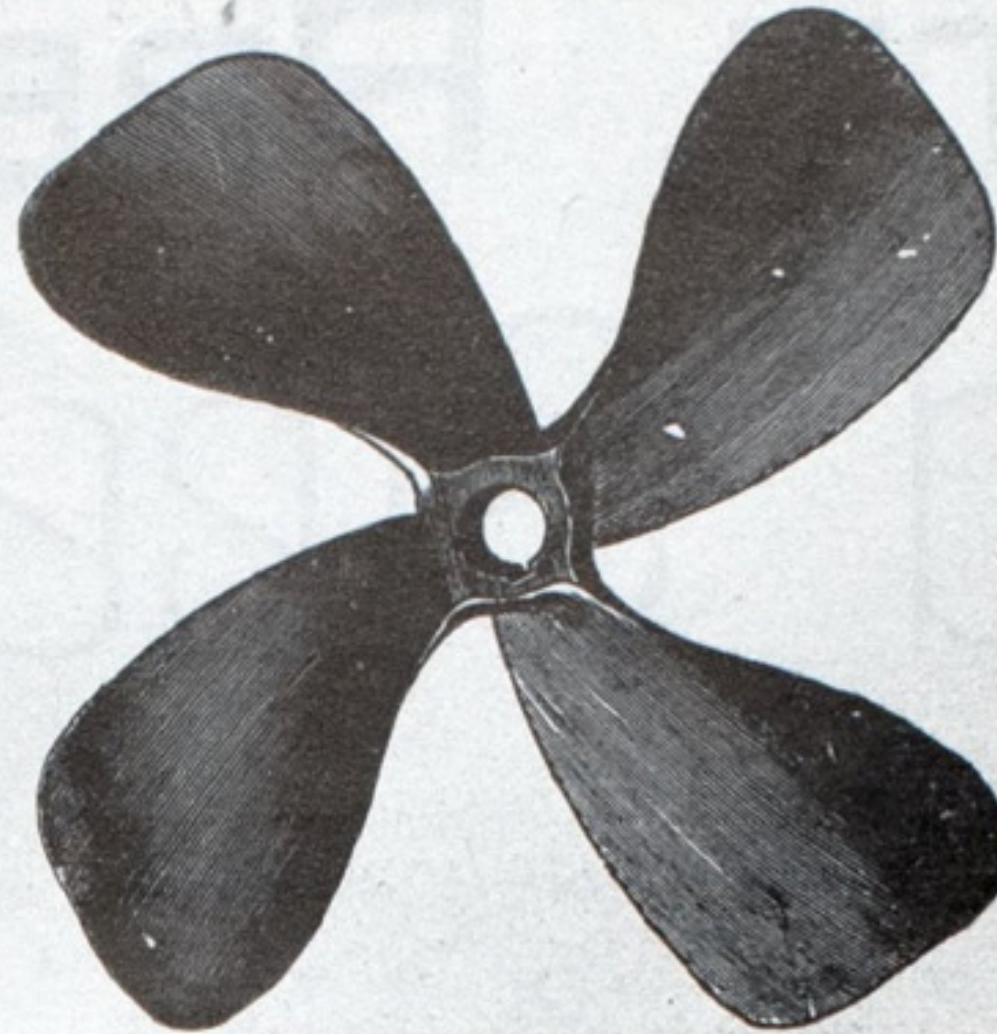
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OLD DOCK

Length of

Keel Blocks

340 ft.

Width of

Gate

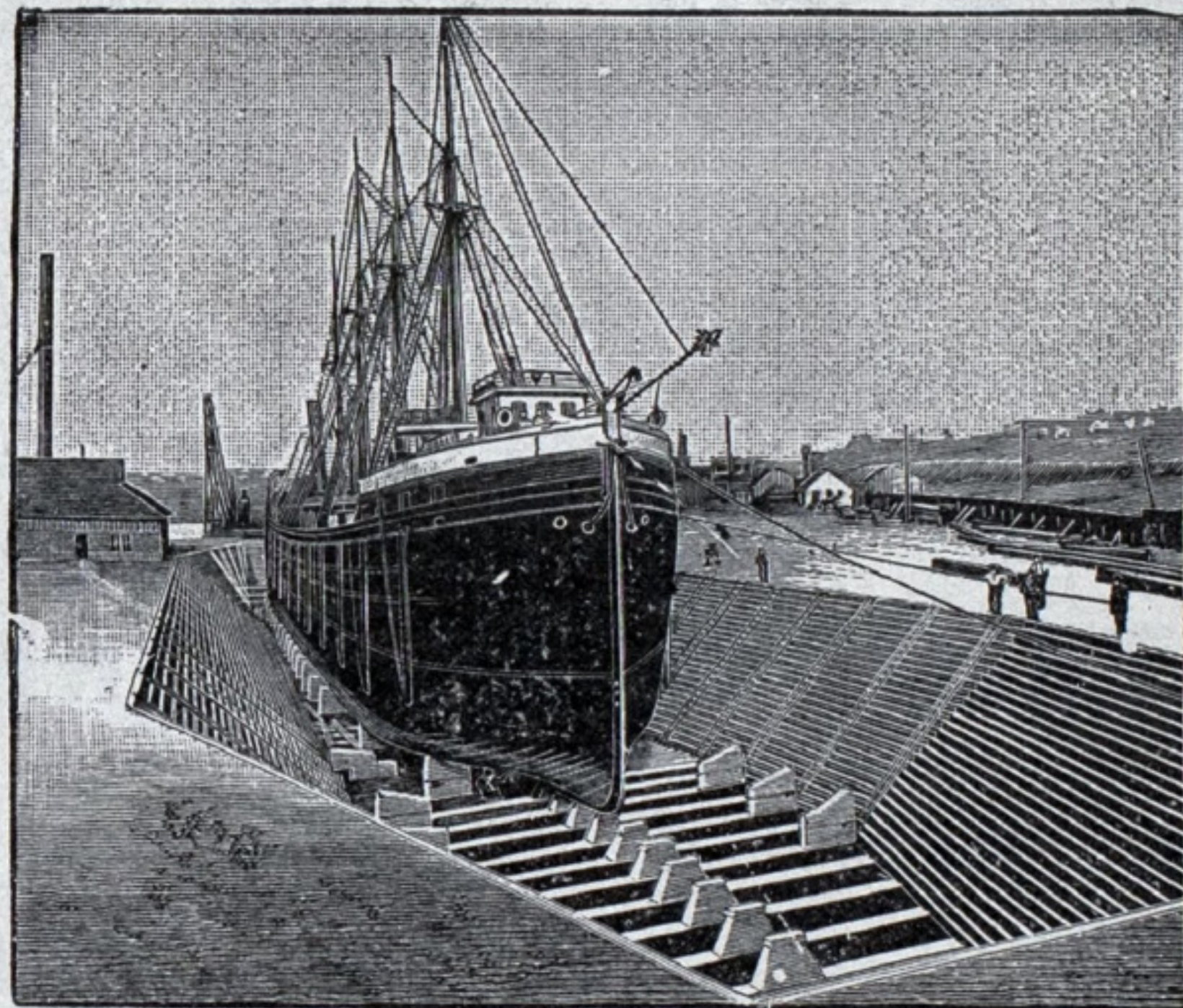
50 ft.

Depth of

Water on

Keel Blocks

16 ft.



NEW DOCK

Length of

Keel Blocks

300 ft.

Width of

Gate

52 ft.

Depth of

Water on

Keel Blocks

14 ft.

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